Fire Weather Annual Report
Southeast Idaho
2009

Pocatello Fire Weather Office
Pocatello, Idaho

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

2009 Fire Weather Annual Report

National Weather Service – Pocatello Fire Weather Office

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1. Introduction:

The National Weather Service, Weather Forecast Office at Pocatello, Idaho has Fire Weather Forecast responsibility for portions of Idaho serviced by the Central, Eastern and Southern Interagency Dispatch Centers (Figure 1). The Pocatello Fire Weather Office produces this Annual Fire Weather Report. Previous reports are maintained up to five years.

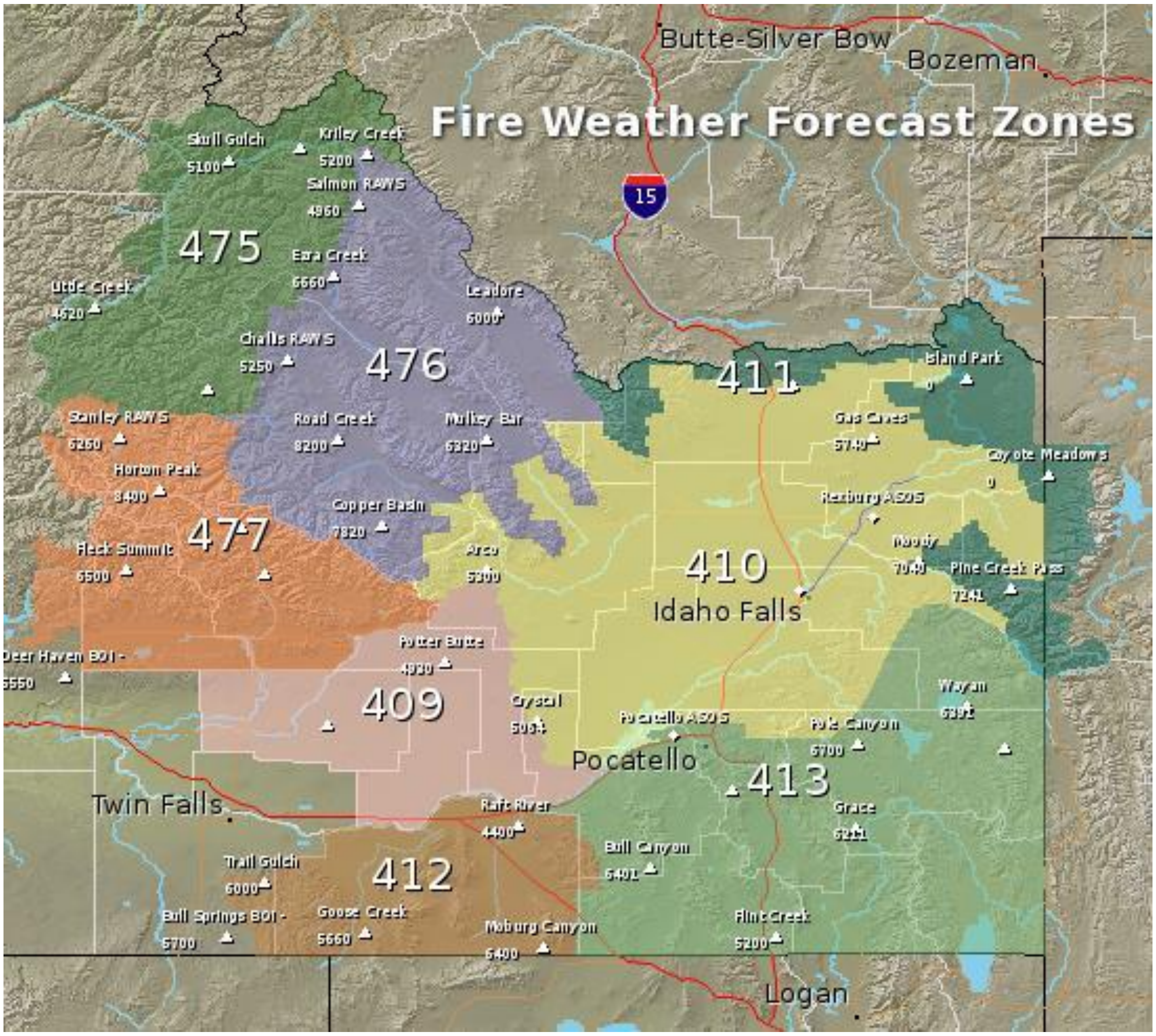

Figure 1 WFO Pocatello Fire Weather area of responsibility (solid color areas).

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2. Overview of the fire season:

The El Niño/Southern Oscillation Index indicated that water temperatures in the central and eastern equatorial Pacific showed a slight warming trend but remained near a (ENSO) neutral state from the summer of 2008 through the fall of 2009. During the period of January to April, 2009 strong westerly winds in the upper levels of the atmosphere (jet stream) remained well off shore in the eastern Pacific Ocean with a rather persistent splitting of the flow pattern focused around 45N 150W. The northern branch of this split flow pattern dominated the weather in Idaho with alternating periods of northwesterly winds aloft and weak high pressure ridging over the state.

The El Nino/Southern Oscillation (ENSO) cycle occurs over a two to seven year period and refers to conditions of sea surface temperatures in the tropical Pacific Ocean. Researchers have identified other cyclic patterns besides ENSO around the globe that may affect long term weather patterns. Some of these cyclic patterns may span 10 or even 30 years. La Nina (colder than normal) and El Nino (warmer than normal) are terms associated with extremes in the ENSO cycle. The ENSO cycle has a strong influence on global climate patterns and is a major player in long term climate outlooks.

Basin averaged precipitation as reported by the SNOTEL observation network (Figure 2.1a) remained in the 85 to 110 percent range; losing some ground in February and March, then gaining it back in April. Mountain snow packs as determined from the water equivalent of the snow (Figure 2.1b), ranged from 80 to 100 percent of average and was fairly consistent across all southeast Idaho basins. Temperatures slightly below normal for most of the spring helped maintain the snow pack at this level. The snow pack was fairly consistent across all southeast Idaho basins. In May, the southern branch of the split flow pattern gained strength and circulated warmer air into Idaho. Temperatures warmed two to three degrees above normal and the snow pack began a rapid melt (Figure 2.1b).

By June, low pressure systems repeatedly developed near the coast of northern California and circulated very moist air into southern Idaho for most of the month. Analysis by the Climate Prediction Center show large portions of southern Idaho experienced precipitation ranging from 200 to 400 percent above normal (Figures 2.2a and b). Strong spikes in precipitation are also evident in Remote Automated Weather Stations (RAWS) throughout southeast Idaho (Figures 4.1a-h). What was left of the snow pack quickly vanished at all but the highest elevations as the rain fell.

Weak westerly winds off the Pacific (typical of ENSO-neutral conditions) persisted well into the summer months with occasional weather disturbances rippling through Idaho. This limited the northward expansion of warm air associated with strong high pressure that normally forms over the Great Basin during the summer to a few short, one or two day episodes near the end of July and again towards the end of August (Figure 2.2c). For the second year in a row the National Weather Service Office in Pocatello never observed temperatures of 100 Fahrenheit degrees the entire year.

A total of 19 days of measurable (≥ .01 inch) rain were observed during the month of June at the National Weather Service Office in Pocatello. The monthly total precipitation of 4.00 inches (Figure 2.3) set a new record for the greatest monthly total precipitation ever observed at the office since records began in 1899. In terms of the annual water year ending September 30 (Figure 2.4), this was 146 percent above the mean.

By late June, short term drought; i.e., evapotranspiration and near surface soil moisture content, as evidenced by the Keetch-Byram Drought Index (Figure 2.5a), was quite low across all of southeast Idaho. The Index increased slowly to a little over 300 by late September (Figure 2.5b). The cooler than normal temperatures and short growing season of 2008, followed by cooler than normal temperatures again this year and substantial rains in June and July served to mitigate the long-term severe drought and very active fire conditions observed in 2007. Comparison of the Palmer Drought Severity Index from September 2007 to September 2009 (Figures 2.7a and b) show this quite well. For the first time in several years, the National Drought Mitigation Center indicated no abnormal conditions in southeast Idaho (Figure 2.6).

Thunderstorm activity was moderate this year and judged to be significant (greater than 15% of aerial coverage) on 5 different days this fire season between late August and mid September (Figure 2.8). The elimination of the wet versus dry (> .10 inch rainfall) thunderstorm requirement from the Red Flag criteria beginning in 2008 resulted in more days with warnings in effect. This fire season wetting rains were observed on two of the five thunderstorm days. Cooler and wetter than normal weather conditions resulted in a much later start to the fire season. For Red Flag purposes, the fuels in Idaho Fire Weather Zones 409 and 412 were not designated as critical until August 20th. Fuels in the Salmon-Challis Forest, Caribou-Targhee Forest and the upper reaches of the Snake River Plain were not designated as critical the entire fire season.

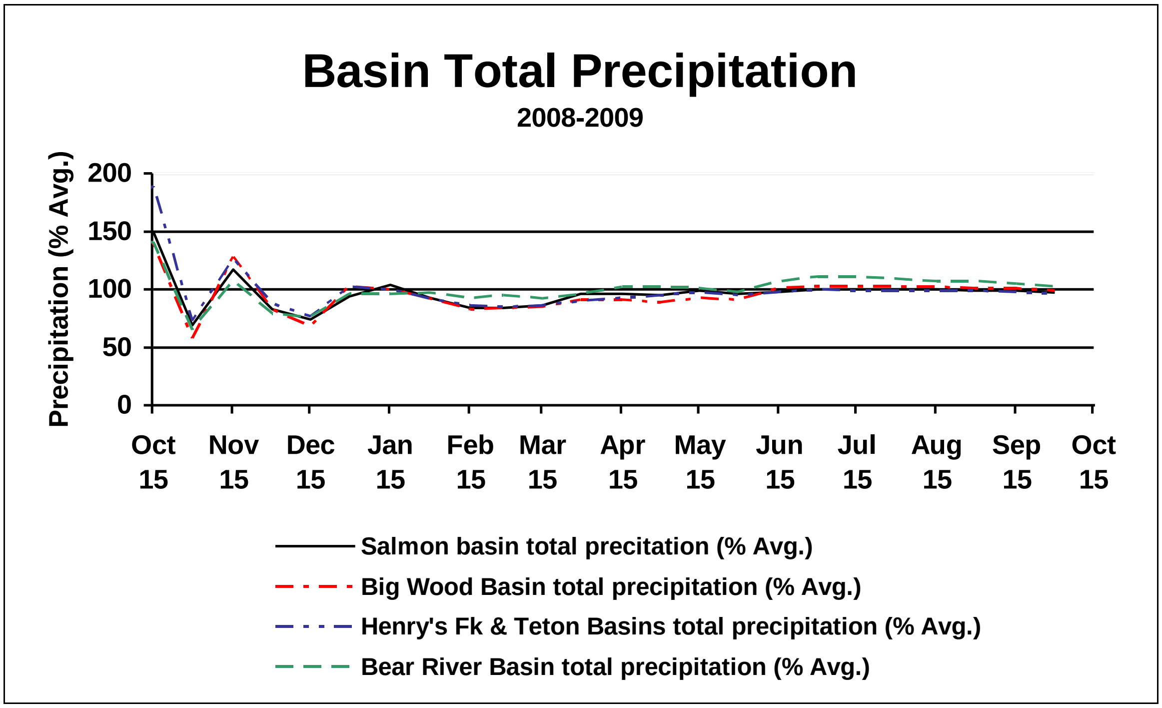

Figure 2.1(a) Total precipitation for select Southeast Idaho Basins expressed as a percent of average. From USDA Natural Resources Conservation Service, National Water and Climate Center, Portland Oregon.

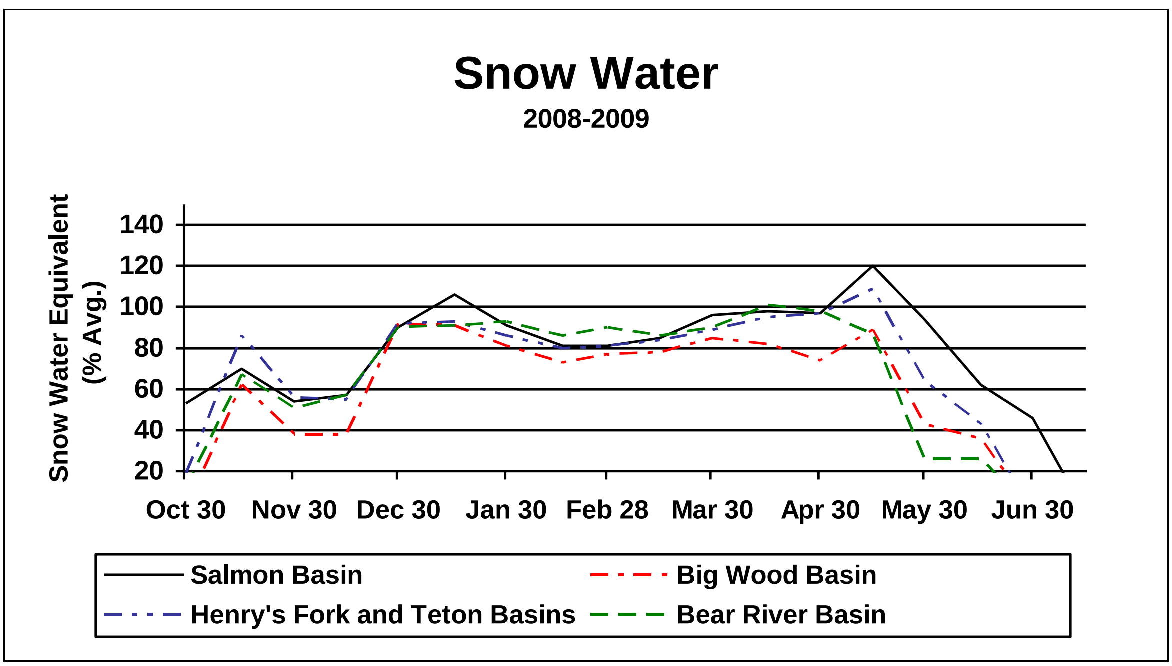

Figure 2.1(b) Snow water equivalent for select Southeast Idaho basins. From USDA Natural Resources Conservation Service, National Water and Climate Center, Portland Oregon.

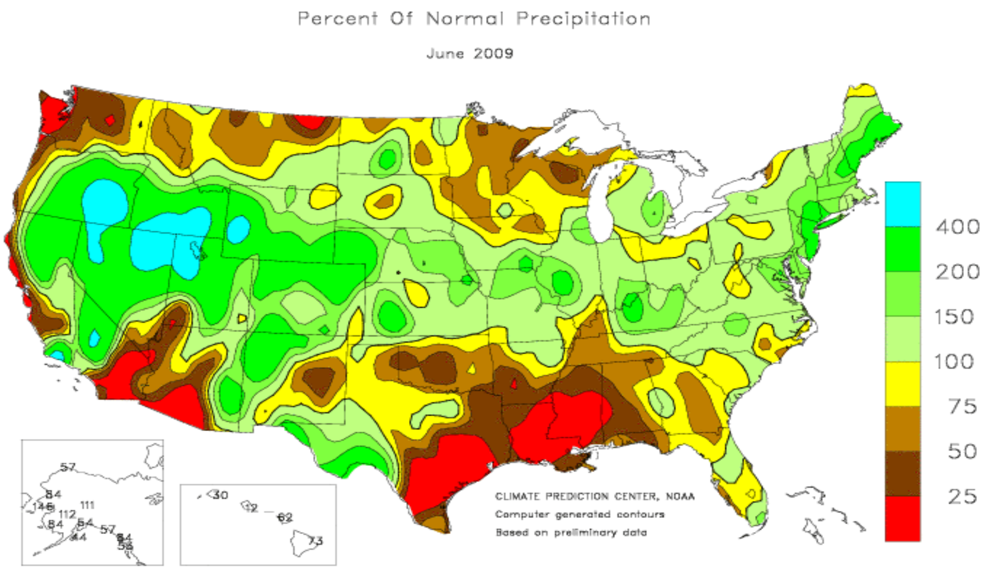

Figure 2.2a Precipitation as a percentage of normal for the month of June 2009, from Climate Prediction Center, National Oceanic and Atmospheric Administration.

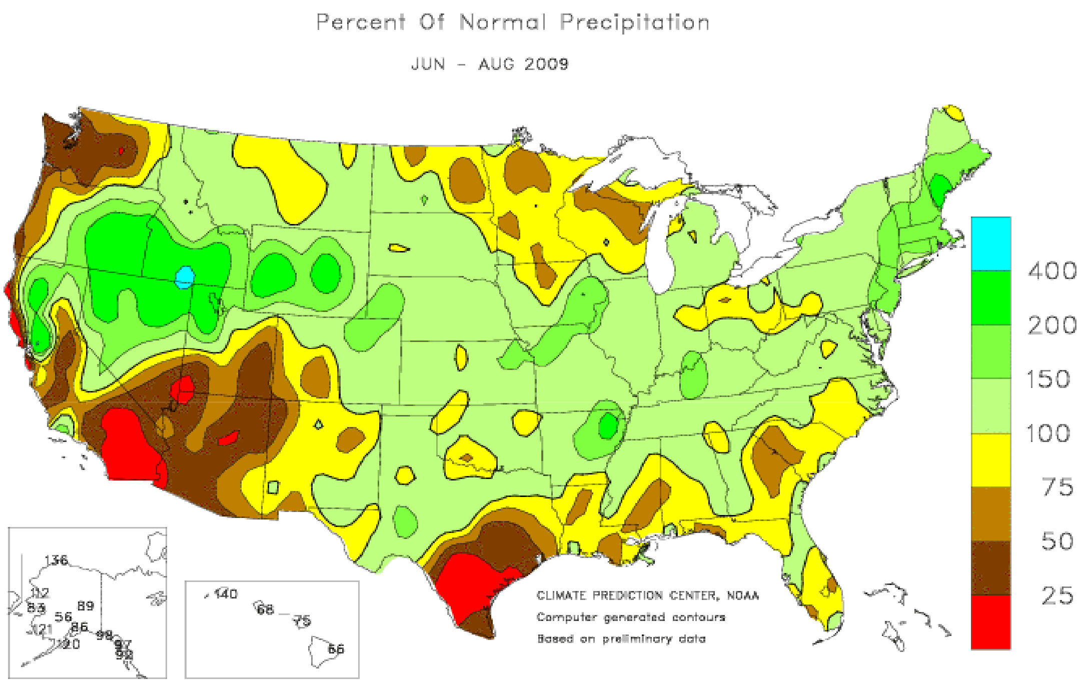

Figure 2.2b Precipitation as a percentage of normal for a 90 day period centered on July 2009, from Climate Prediction Center, National Oceanic and Atmospheric Administration.

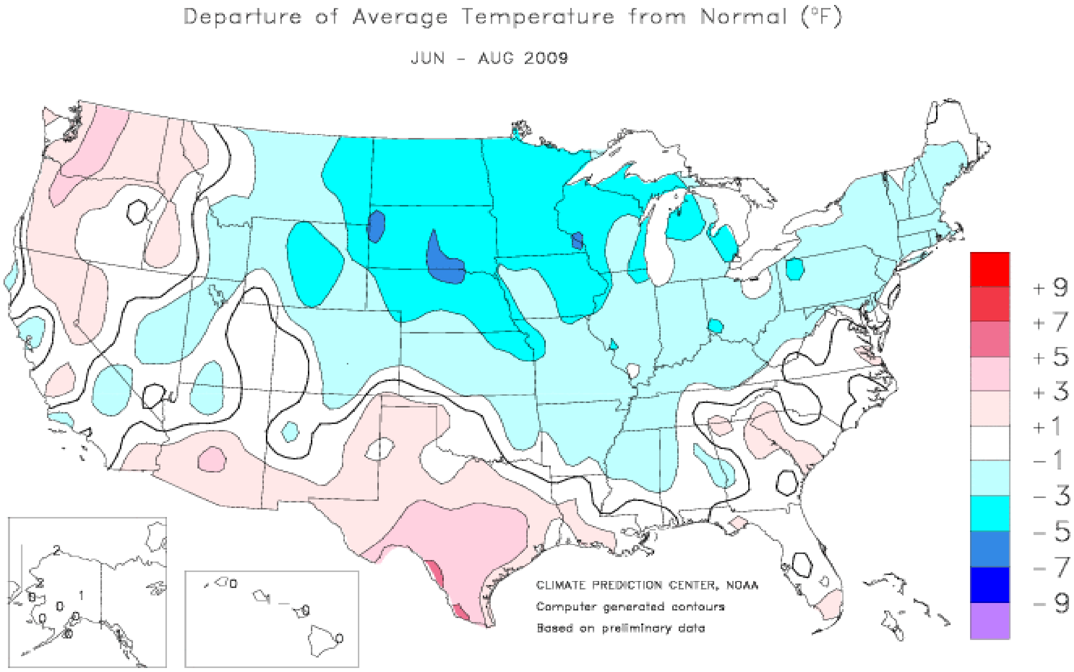

Figure 2.2c Temperature departure from normal for a 90 day period centered on July 2009, from Climate Prediction Center, National Oceanic and Atmospheric Administration.

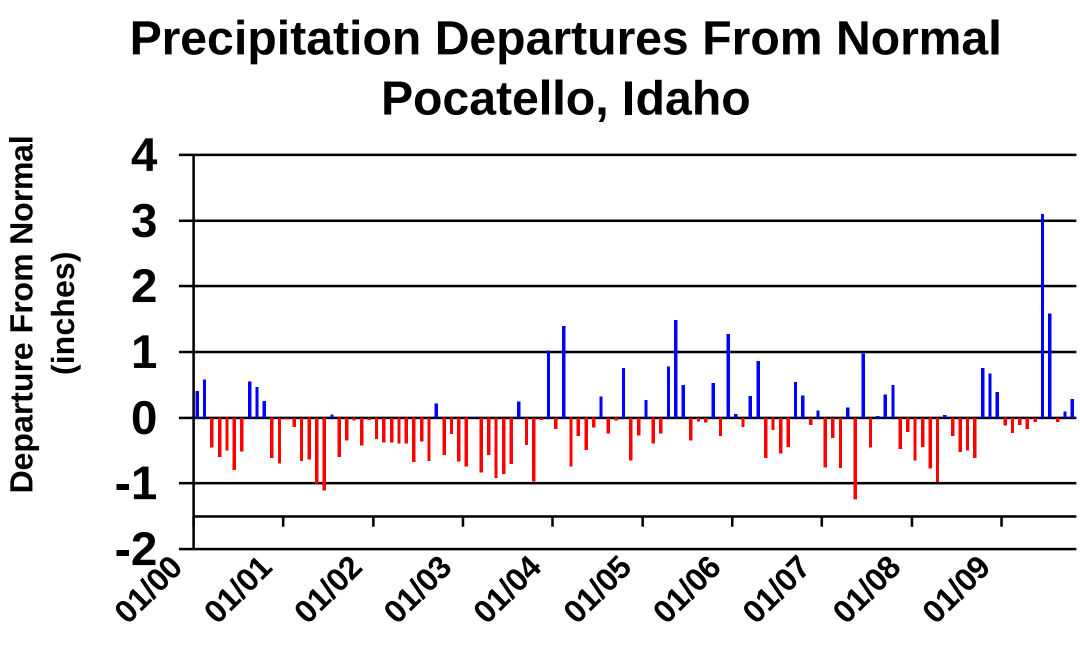

Figure 2.3 Precipitation departures from normal at Pocatello, Idaho based on thirty-year normals of data from 1971 to 2000 archived at the National Climatic Data Center.

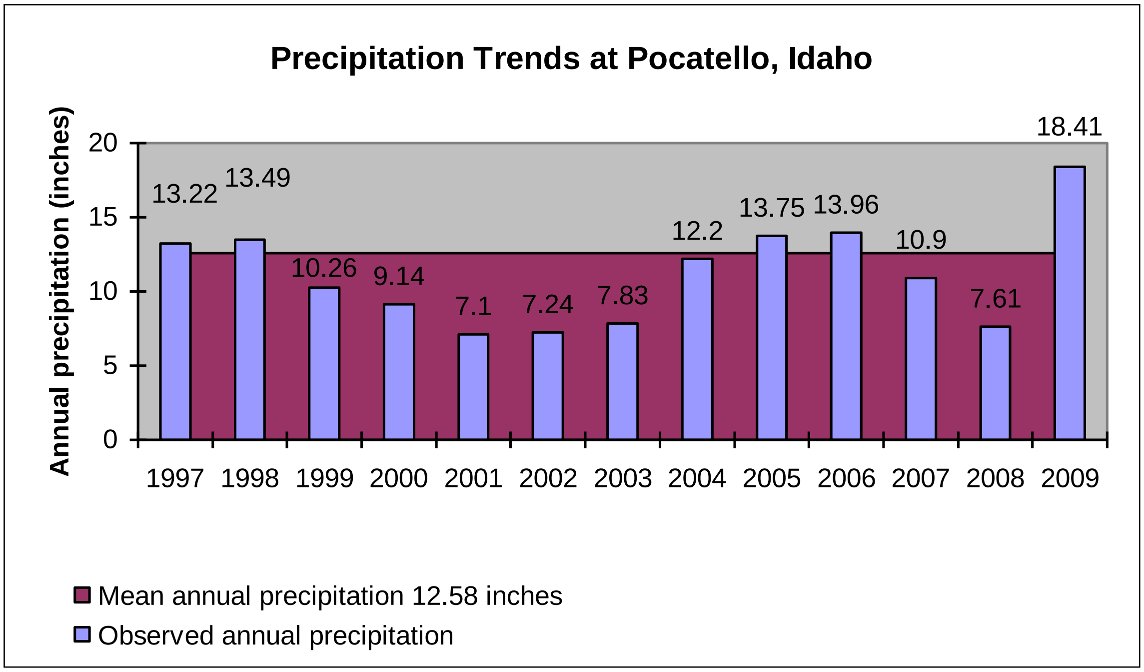

Figure 2.4 Water year (Oct. 1 to Sep. 30) observed precipitation at Pocatello, Idaho.

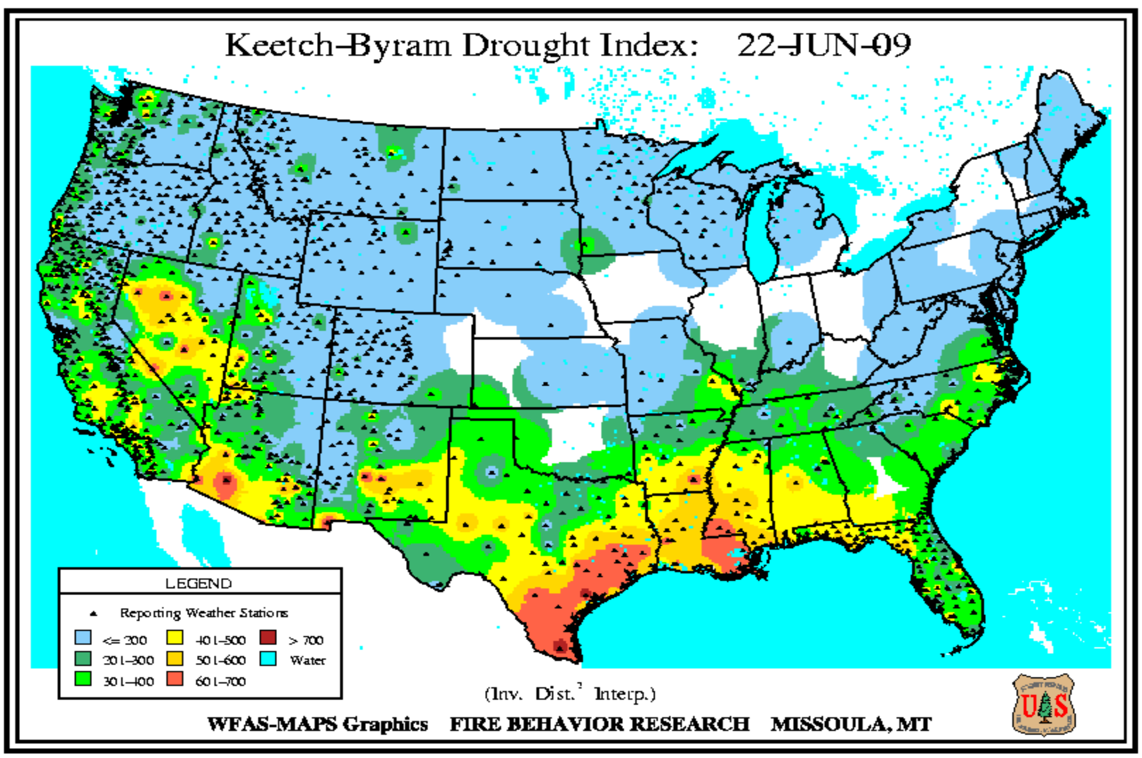

Figure 2.5(a) Keetch-Byram Drought Index reflecting more short term drought conditions, i.e. evapotransporation and near surface soil moisture. Valid June 22, 2009.

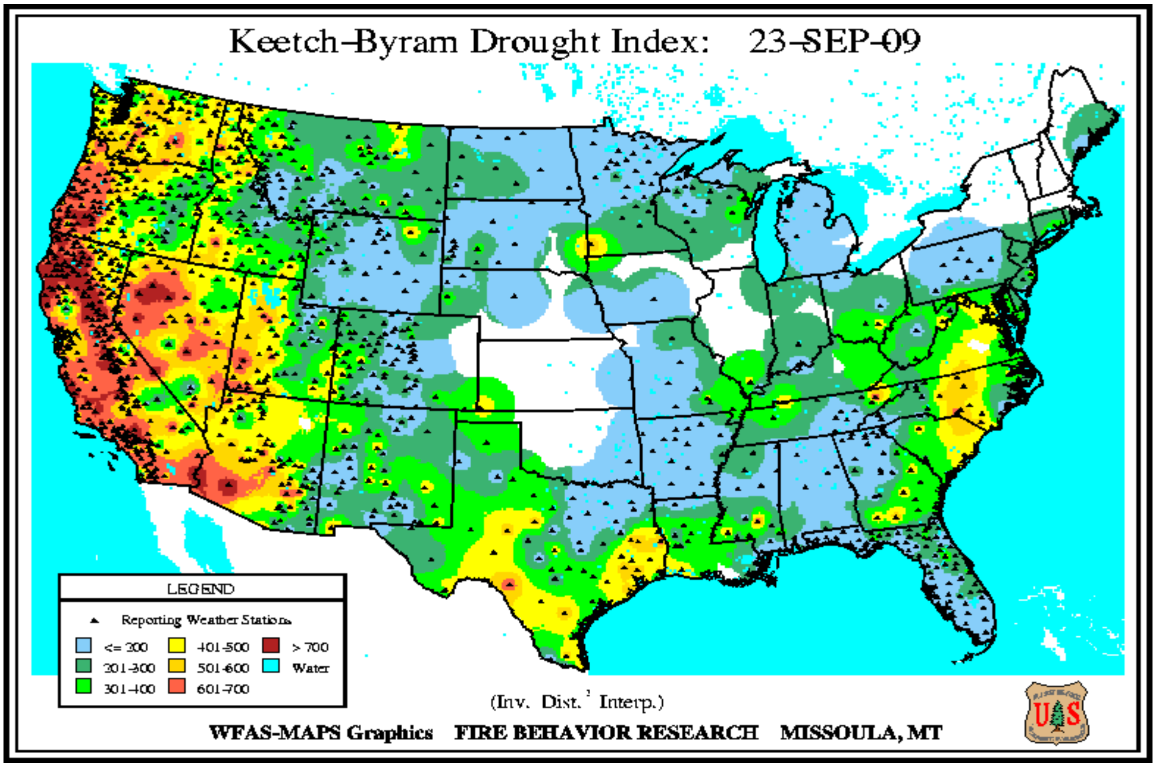

Figure 2.5(b) Keetch-Byram Drought Index reflecting more short term drought conditions, i.e. evapotransporation and near surface soil moisture. Valid September, 2009.

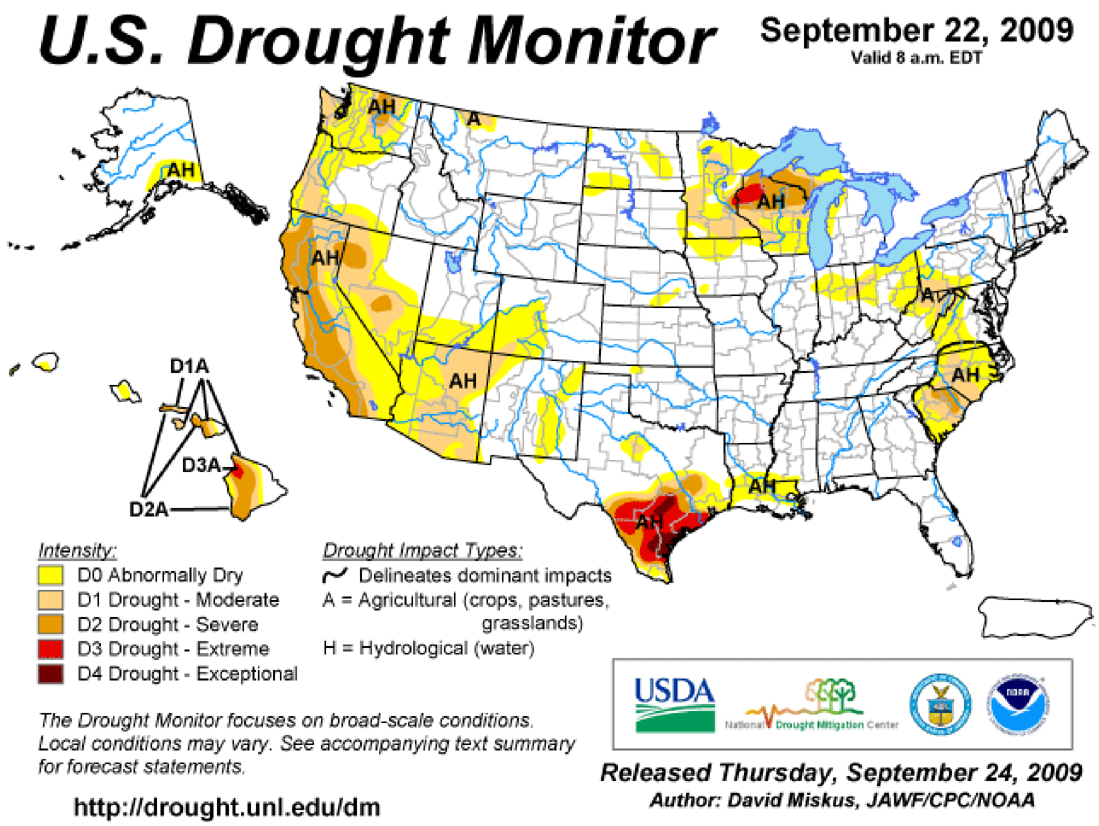

Figure 2.6 Drought summary map is based on a multi-index drought classification scheme and produced jointly by the National Drought Mitigation Center (University of Nebraska-Lincoln) and several federal partners including Joint Agricultural Weather Facility (U.S. Department of Agriculture and Department of Commerce/National Oceanic and Atmospheric Administration), Climate Prediction Center (U.S. Department of Commerce/NOAA/National Weather Service), and National Climatic Data Center (DOC/NOAA).

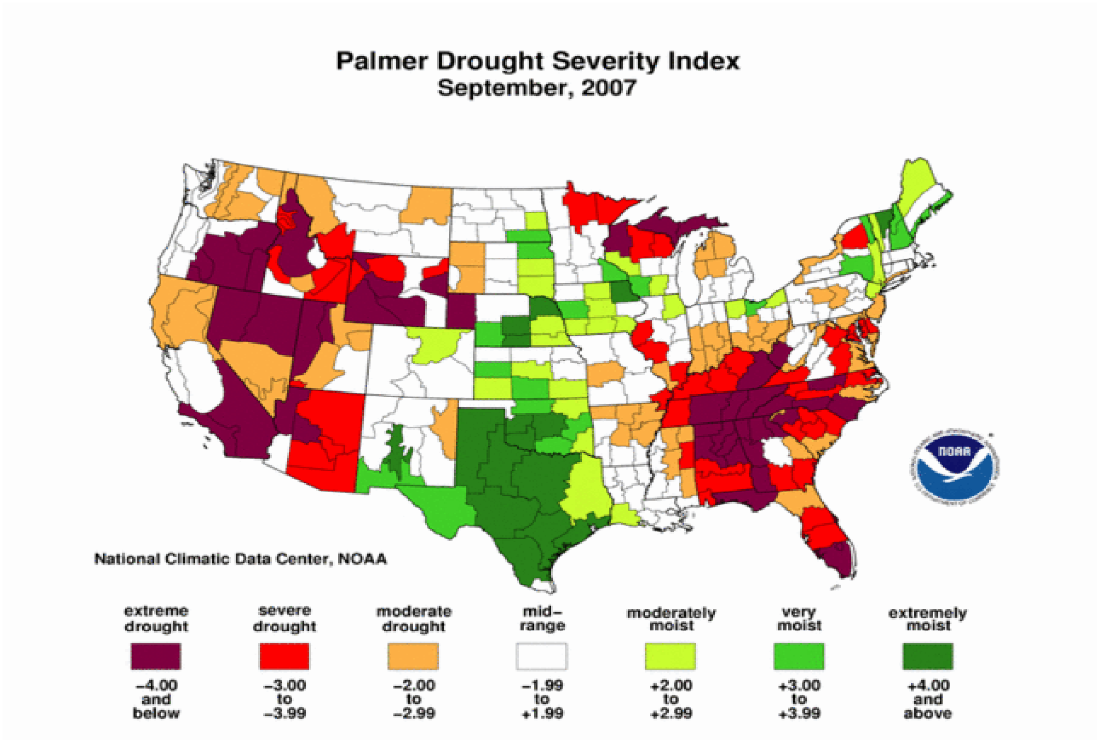

Figure 2.7(a) Palmer Drought Severity Index (September 2007) measuring long term meteorological conditions over many months.

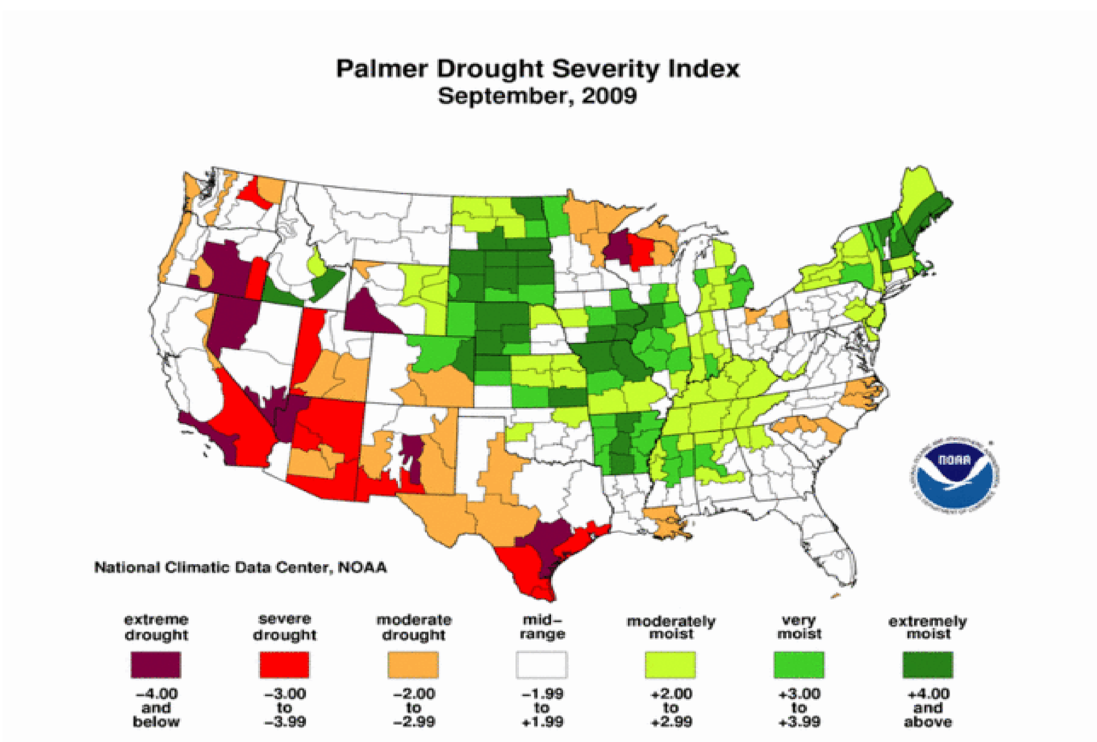

Figure 2.7(b) Palmer Drought Severity Index (September 2009) measuring long term meteorological conditions over many months.

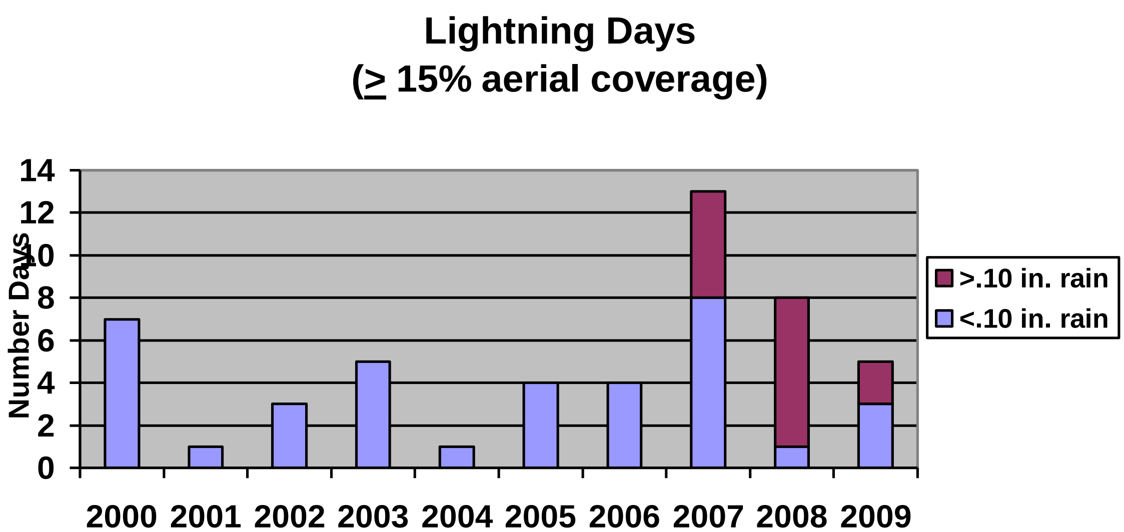

Figure 2.8 Number of days when thunderstorm and lightning activity in Southeast Idaho was judged to be significant as part of the Red Flag Event verification process. Prior to 2007 only days where thunderstorms were characterized as "dry" (<.10 inch rain) are indicated.

3. Weather in review: October 2008 – September 2009

October 2008: A Pacific storm system brought substantial rainfall to southeast Idaho on the 3rd and 4th of October. Up to one half inch of rain was common in areas south of Stanley. On October 10th and 11th a strong early season winter storm left as much as 6 inches of snow, even in the Pocatello area, with nearly a foot farther west in Rupert and Burley. Storms tracking through Utah left southern areas wetter than the northern areas for the first half of the month. The colder temperatures in the cloudy and wet weather could not be overcome by the warmer and much drier second half of the month, with nearly all October temperatures coming in below normal.

November – December 2008. The dry spell for the second half of October gave way to a stormy second half of autumn. Precipitation was well above normal for both months. Major storms occurred on 1-5 and 8-10 November, as well as 8 and 12-14 December. The storms culminated in a stormy period from the 22nd to the 25th of December, including a blizzard over much of southern Idaho on the 24th and 25th. The above normal precipitation for these two month overcame the below normal October, with southern Idaho snowpack near normal by the beginning of the New Year 2009.

January – February 2009. The frequency of storms started to slacken; enough so that precipitation received in most locations was below normal. This was mainly due to a persistent upper level ridge over the west coast of the United States. This kept storms in Canada until they had crossed east of the Continental Divide. Some strong storms did break through, on the 22-25 January, 16-17 February, and 23-24 February. While January was near average for temperatures, the persistent northerly flow after storm passage in February led to a much colder than normal month, especially for southern Idaho. Snow pack decreased to around 80 percent of normal, especially with the much drier than normal February. Basins south of the Snake River faired the best, with snow pack remaining near normal through the mid-winter.

March—April 2009. As the weak La Niña that began in the summer of 2008 began to subside, spring in Idaho turned into one of the coldest in memory. The cold trend actually started in February, with the Pocatello regional airport and Fanning Field near Idaho Falls reporting average temperatures of 5.0 and 4.4 degrees colder than normal. This trend continued for the next two months. The cold temperatures prevented any significant early melt. In March, the storm track stayed very close to Idaho with a number of storms moving through the Gem State, notably on the 2-4 March, 15-16 March, and 21-23 March. Stanley, Idaho recorded 2 ½ times the normal amount of precipitation for the month. The storms slackened slightly for April, with storms affecting the area on the 2nd-3rd, 14th-15th, and 26th-28th. The stronger heating of April relieved the much colder temperatures, but all areas continued below normal for the month. Precipitation was more of a mixed bag—with accumulations less frequent, some areas received below normal precipitation for April, while others were slightly above normal.

May 2009. The weak La Niña of 2008-2009 had become just a memory with Pacific Ocean temperatures neutral during this month. The colder than normal temperatures indicated signs of a change with most temperatures near normal for the time of year. Fronts on the 2nd-3rd, the 14th, the 23rd-24th, and the 30th were more convective in nature. Most locations received less than normal precipitation, while a few locations, such as Stanley, Idaho, received a liquid water equivalent that was 161 percent of normal. The cold spring preserved the snowpack, with most river basins near normal on May 1st, with only the central Idaho mountain areas seeing 80 to 90 percent of normal

June 2009. By this month, climate scientists had noticed a rapid transition from the La Niña pattern of cold eastern Pacific sea temperatures to a developing El Niño. However, this is likely not related to the very rainy month that essentially put the damper on an active fire season for central and eastern Idaho. Pocatello recorded its wettest month ever, 4.00 inches of precipitation (more than *four times* the normal amount!). It rained on 19 of the 30 days in the month. Pocatello was not alone, with Stanley experiencing double the normal amount of rain, and Idaho Falls more than 3 ½ times the normal rainfall (and broke the record for rainfall in the month of June). Usually during the late spring and through summer, upper level high pressure is nearly stationary along the west coast or more inland over the western states. High pressure was nowhere to be found in that area for the first three weeks of the month. In fact, a west coast low was nearly stationary, or being replaced quickly by another low along the coast. The abundant cloudiness kept temperatures colder than normal.

July 2009. Except for a convective outbreak on the 2nd and 4th of July in the Pocatello area (2.27 inches), July saw a cessation of the heavy rains. The west coast low was still present in early July, but its main effect was to keep temperatures cool with southwesterly flow over southern Idaho for much of the time. Most locations received only 40 to 60 percent of normal precipitation. Pocatello was the lone exception due to a slow moving complex of thunderstorms that flooded the urban landscape with more than three times the average rainfall for the month. The cooler temperatures under cloudy skies kept humidity from staying any prolonged period in the 5 to 15 percent range, and thus fuel moistures remained high, especially for higher elevations. The second half of July was noticeably dry, with the west coast low finally fading and the more normal west coast high replacing the anomalous feature.

August 2009. The month opened up with the west coast low pressure returning for about the first half of the month. As it did in July, the temperatures stayed cool. It did allow for more than average precipitation in central Idaho, while eastern Idaho experienced lower than normal precipitation. Stanley, Idaho, once again reported double the average expected precipitation. The first serious dry cold front pushed through on the 23rd-24th, when finally enough curing had occurred to warrant a Red Flag Warning.

September 2009. The first significantly warmer than normal month since November 2008 brought more Red Flag conditions, but the heat and extreme dry conditions of high summer had long passed. Central Idaho again had below normal rainfall, but eastern and southern Idaho had near normal precipitation for the month. The precipitation was mainly powered by a low pressure circulation that meandered around the great basin for several days during the mid-month (producing rainfall at Pocatello and Idaho Falls on the 14^{th} and 15^{th}), and by the final frontal passage on September 30^{th} that brought snow down to the floor of the Snake River Plain. This final storm put an end to what ended up a very quiet fire season for central and eastern Idaho.

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4. Precipitation and Dry 1000 hour fuels by zone:

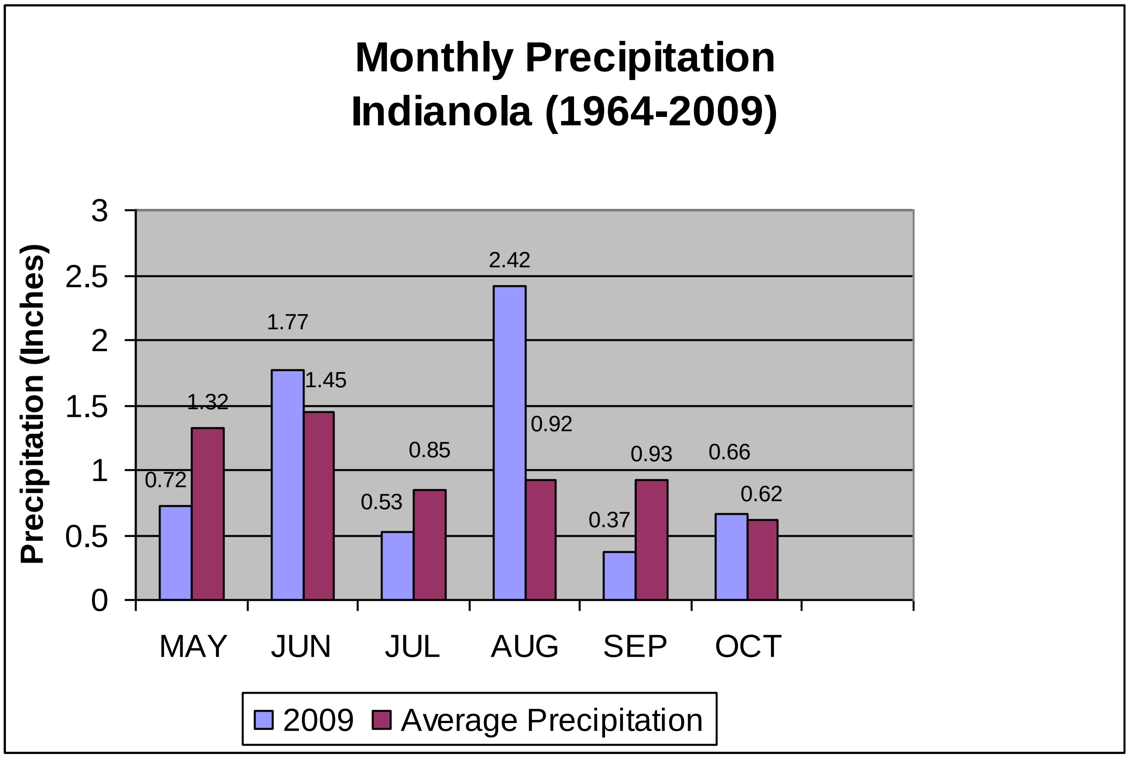

Figure 4.1(a) Observed and average precipitation at Indianola RAWS site, Fire Weather Zone 475.

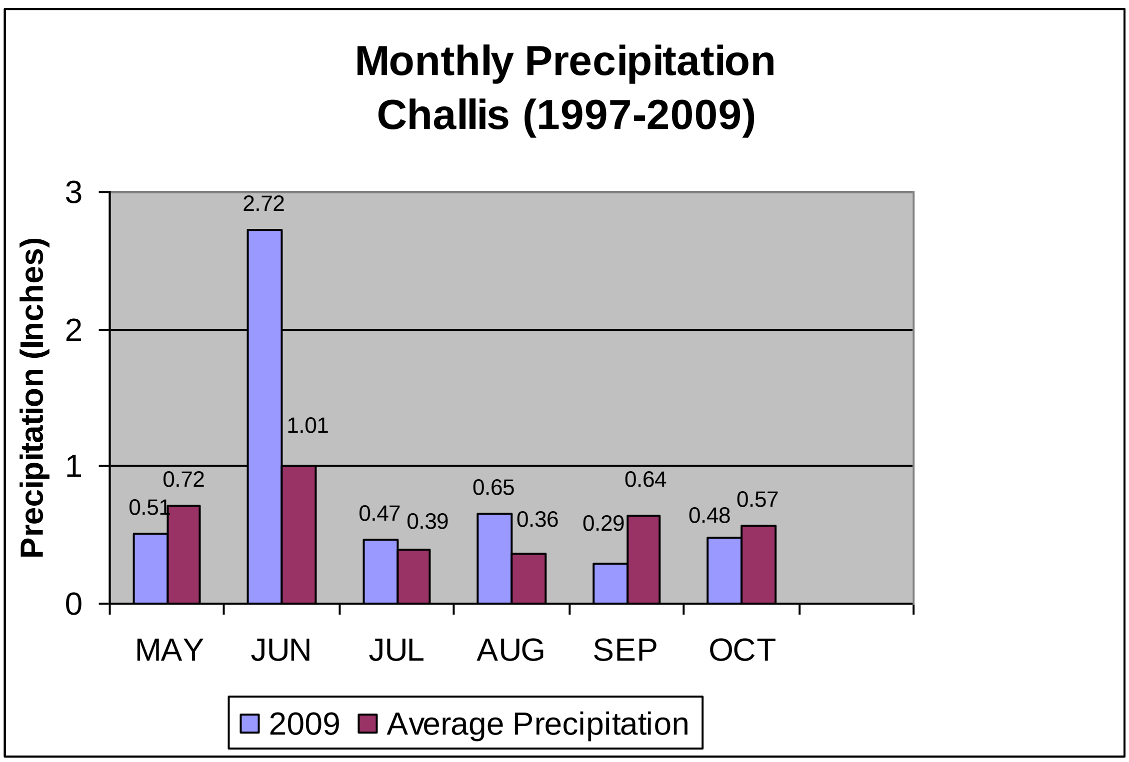

Figure 4.1(b) Observed and average precipitation at Challis RAWS site, Fire Weather Zone 476.

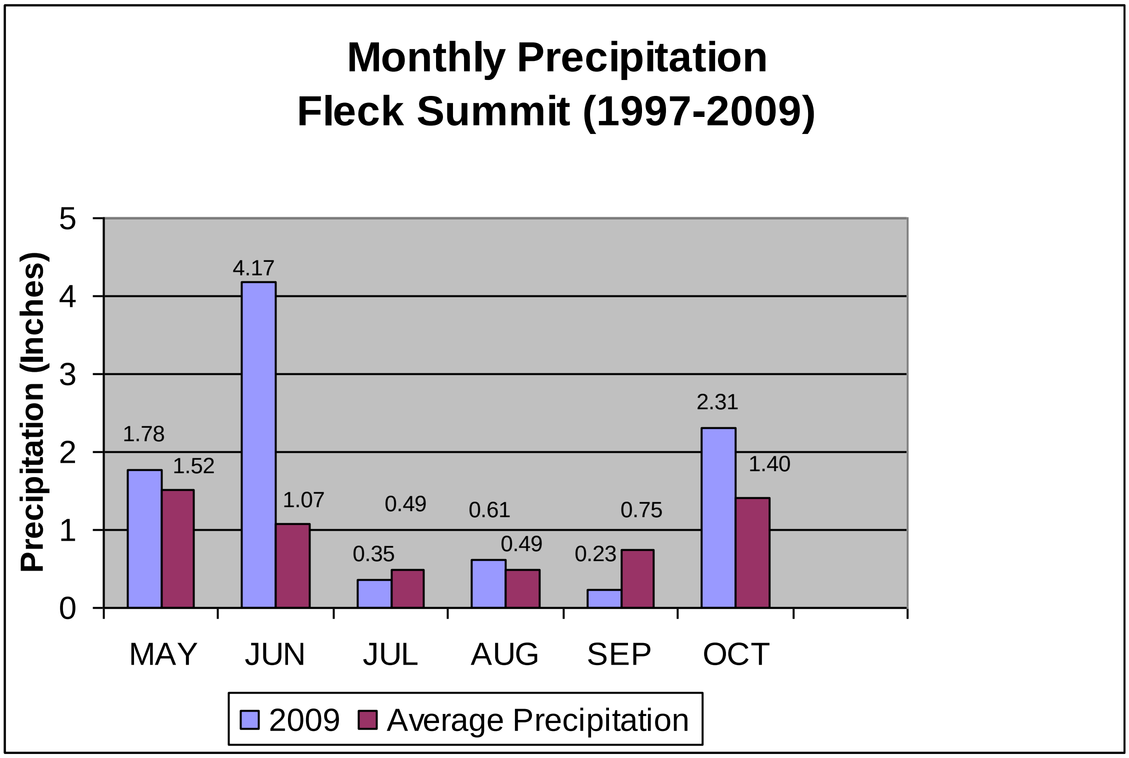

Figure 4.1(c) Observed and average precipitation at Fleck Summit RAWS site, Fire Weather Zone 477.

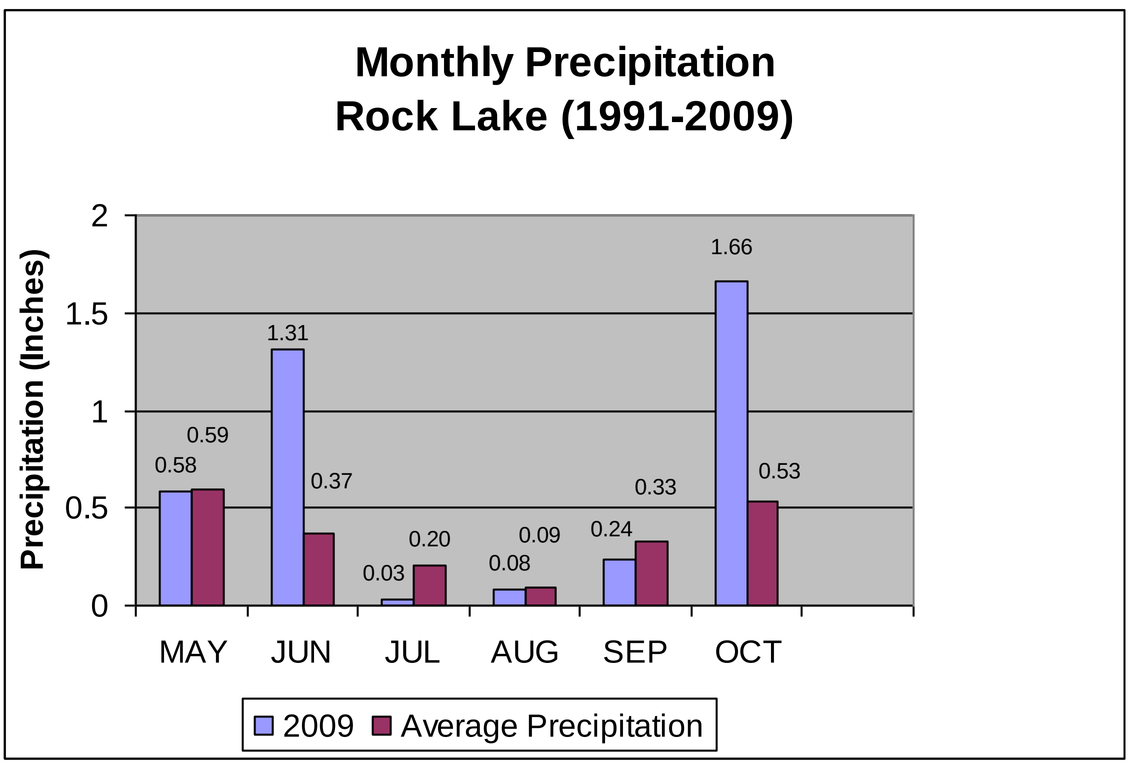

Figure 4.1(d) Observed and average precipitation at Rock Lake RAWS site, Fire Weather Zone 409.

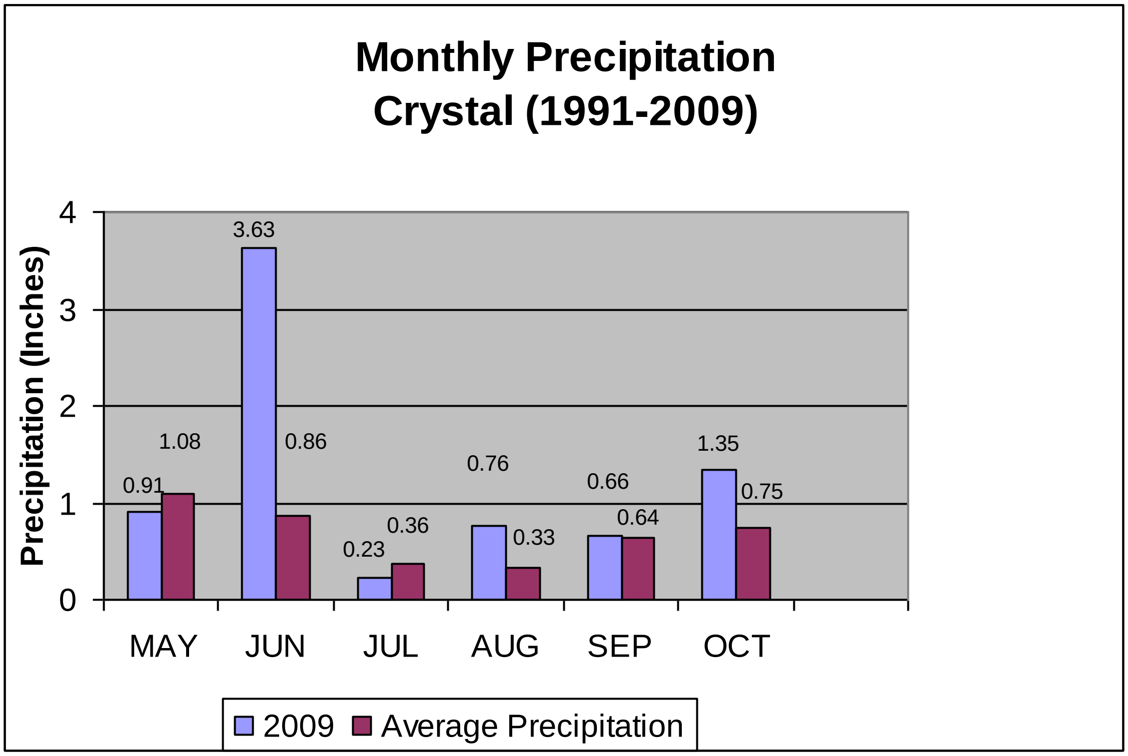

Figure 4.1(e) Observed and average precipitation at Crystal RAWS site, Fire Weather Zone 410.

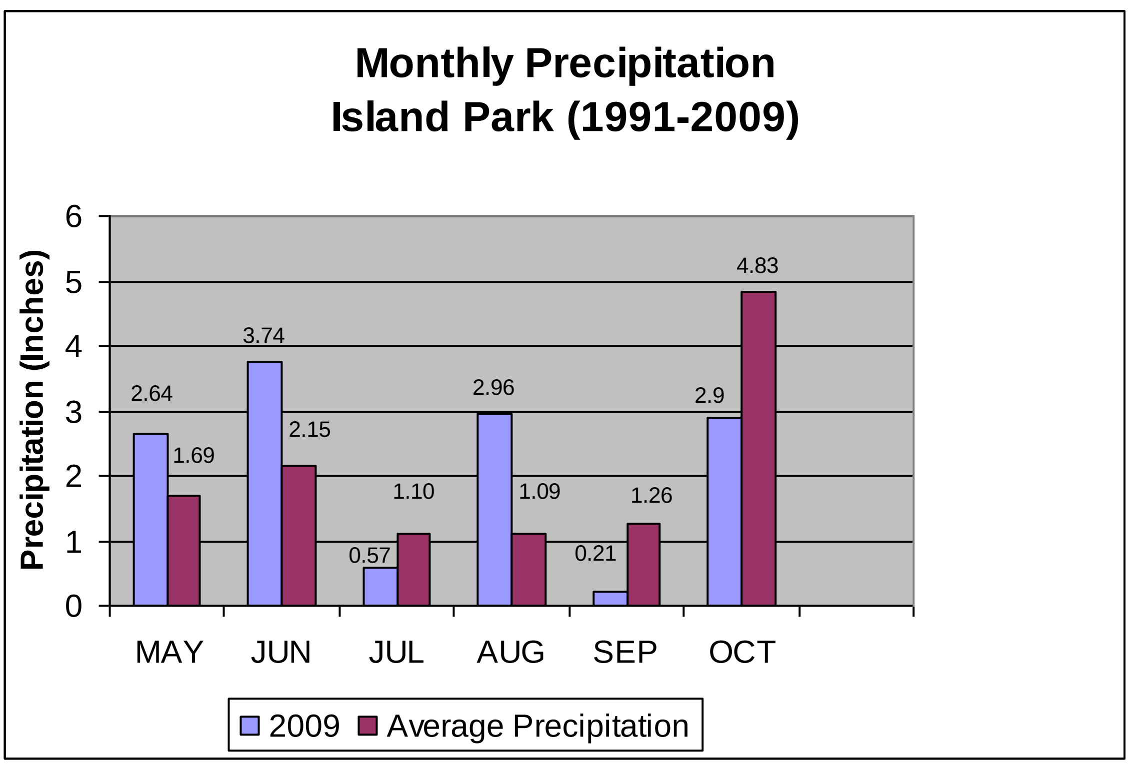

Figure 4.1(f) Observed and average precipitation at Island Park RAWS site, Fire Weather Zone 411.

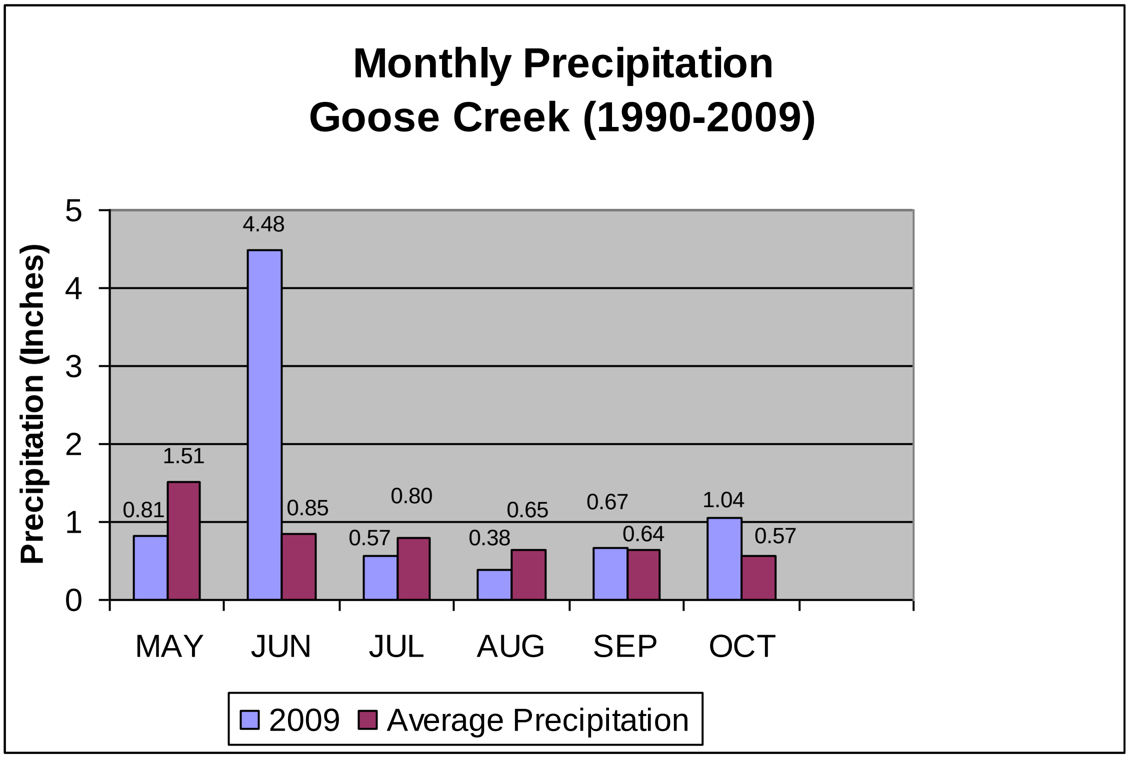

Figure 4.1(g) Observed and average precipitation at Goose Creek RAWS site, Fire Weather Zone 412.

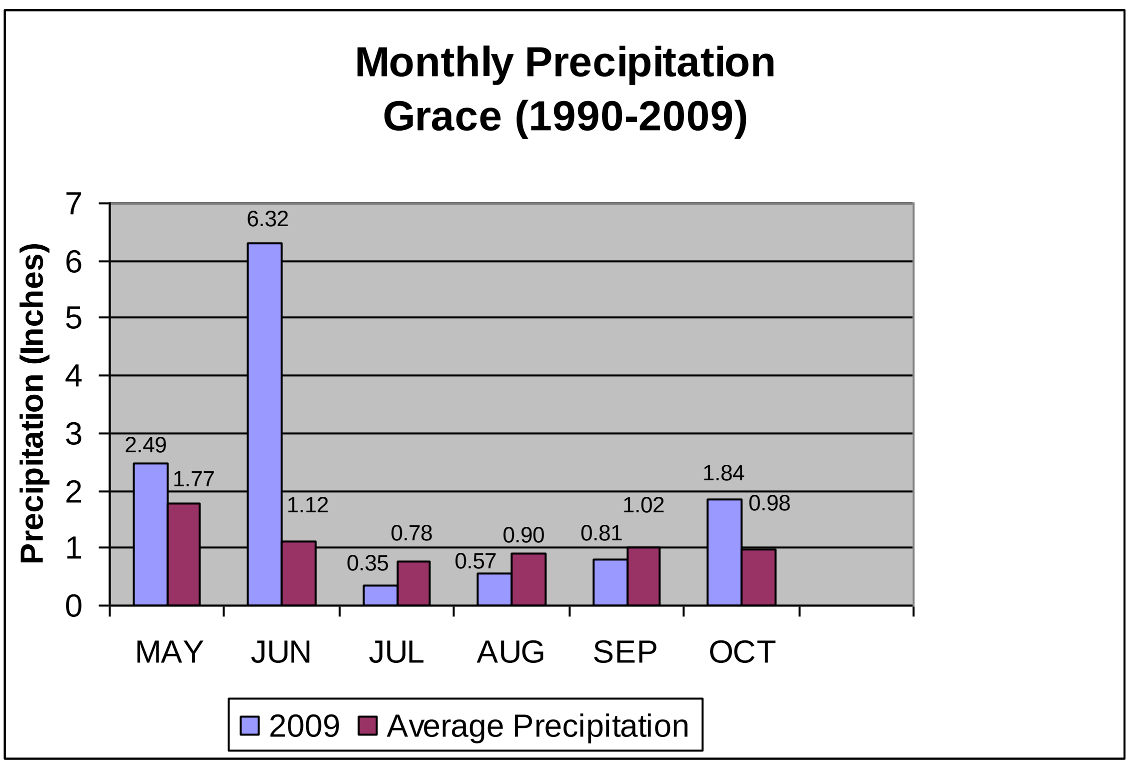

Figure 4.1(h) Observed and average precipitation at Grace RAWS site, Fire Weather Zone 413.

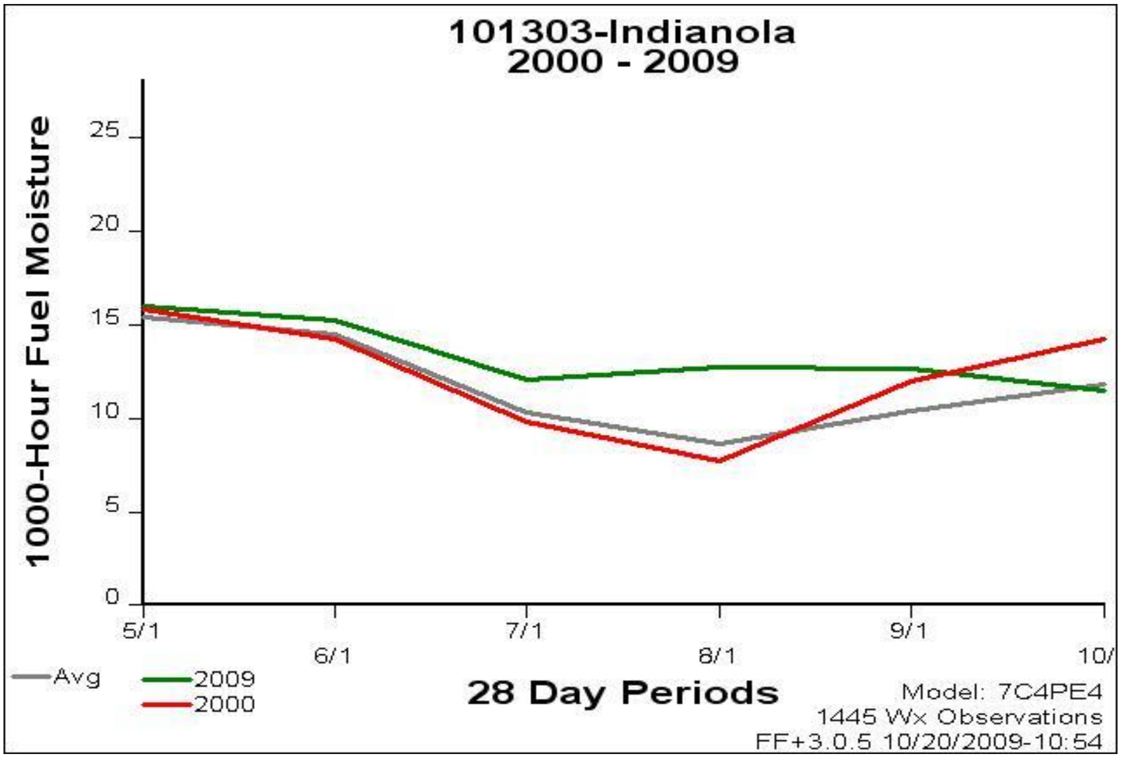

Figure 4.2(a) Observed and average 1000 Hour Fuel Moisture at Indianola RAWS site, Fire Weather Zone 475.

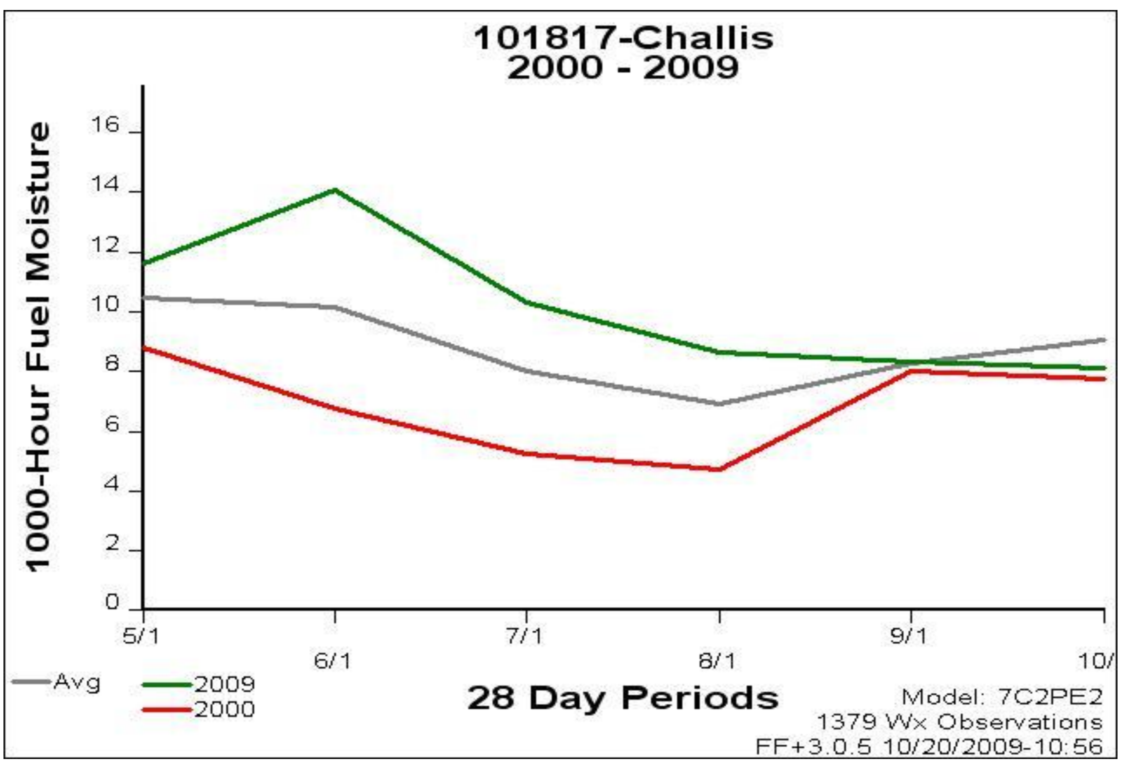

Figure 4.2(b) Observed and average 1000 Fuel Moisture at Challis RAWS site, Fire Weather Zone 476.

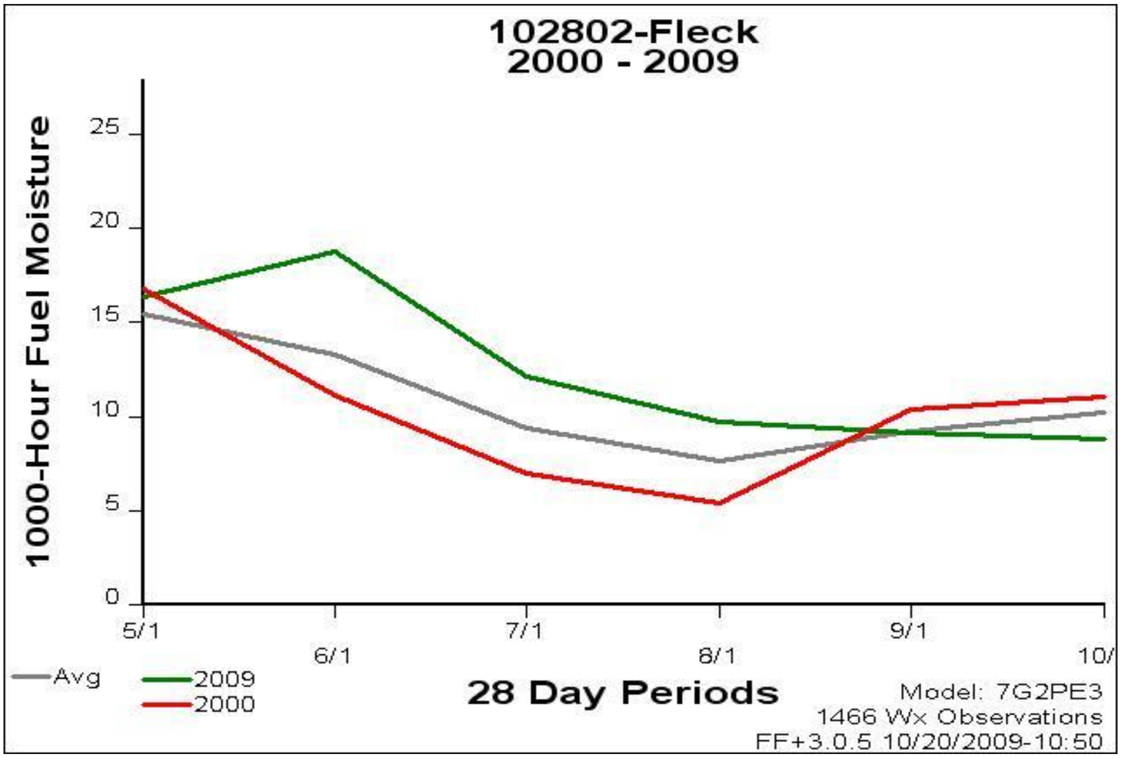

Figure 4.2(c) Observed and average 1000 Fuel Moisture at Fleck Summit RAWS site, Fire Weather Zone 477.

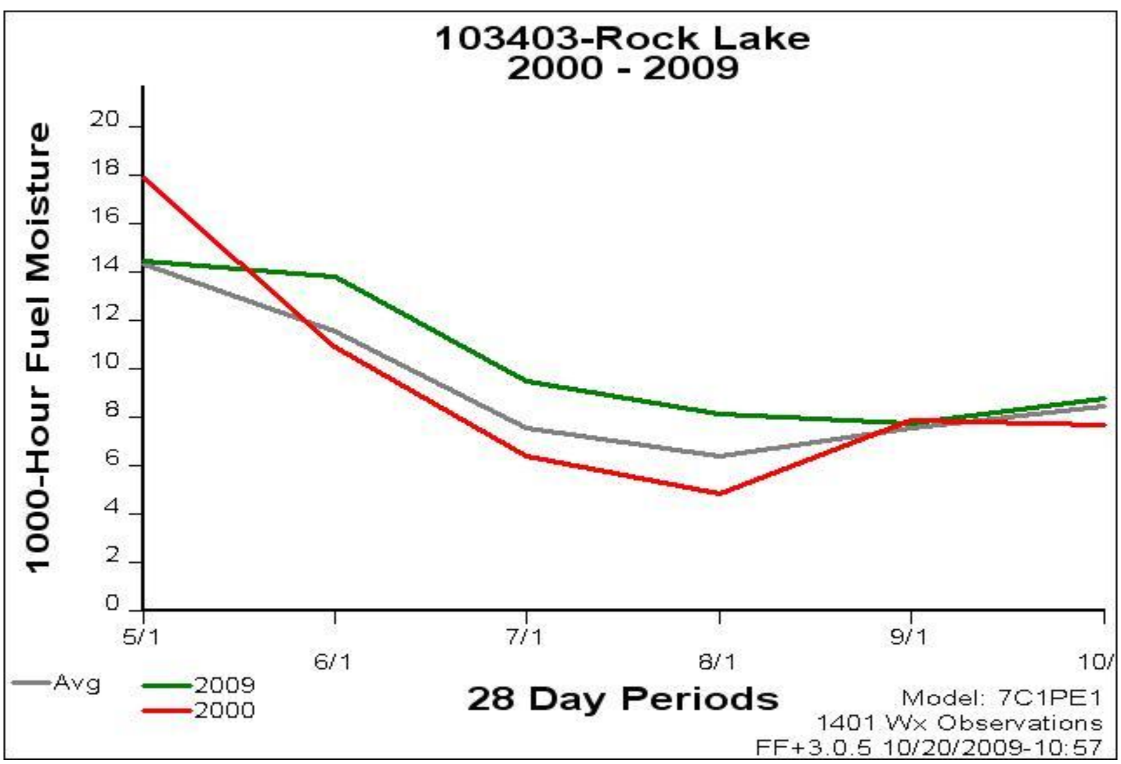

Figure 4.2(d) Observed and average 1000 Hour Fuel Moisture at Rock Lake RAWS site, Fire Weather Zone 409.

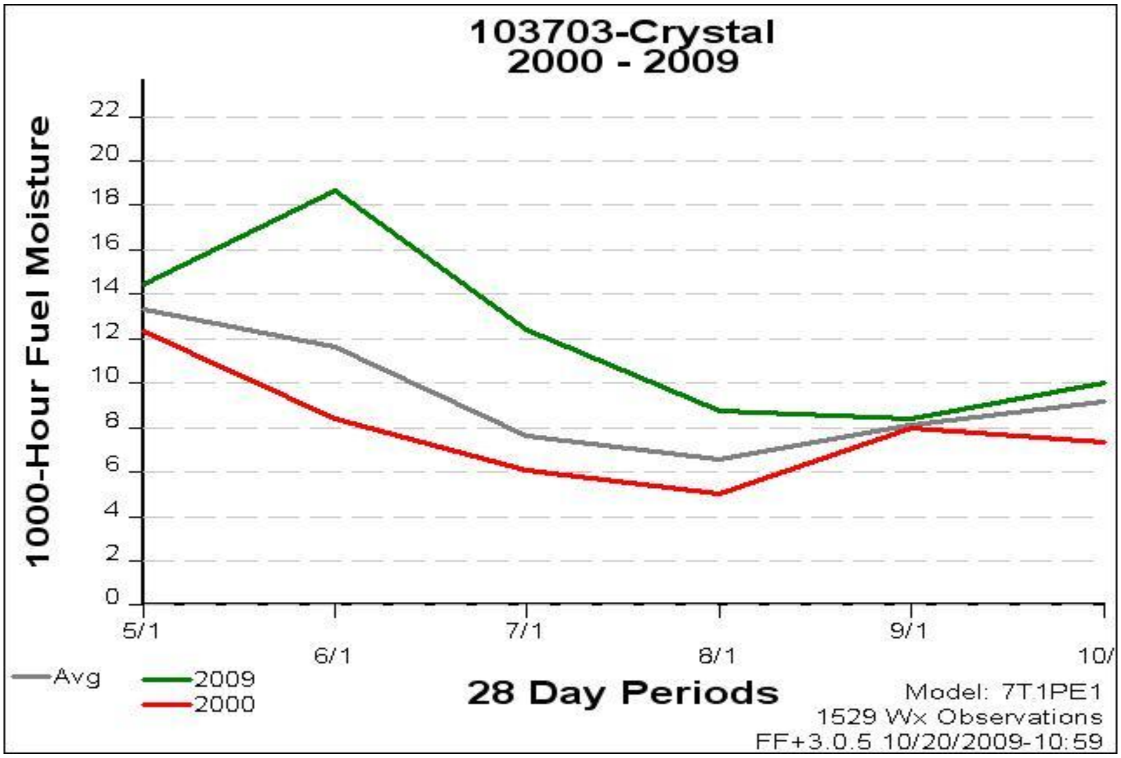

Figure 4.2(e) Observed and average 1000 Hour Fuel Moisture at Crystal RAWS site, Fire Weather Zone 410.

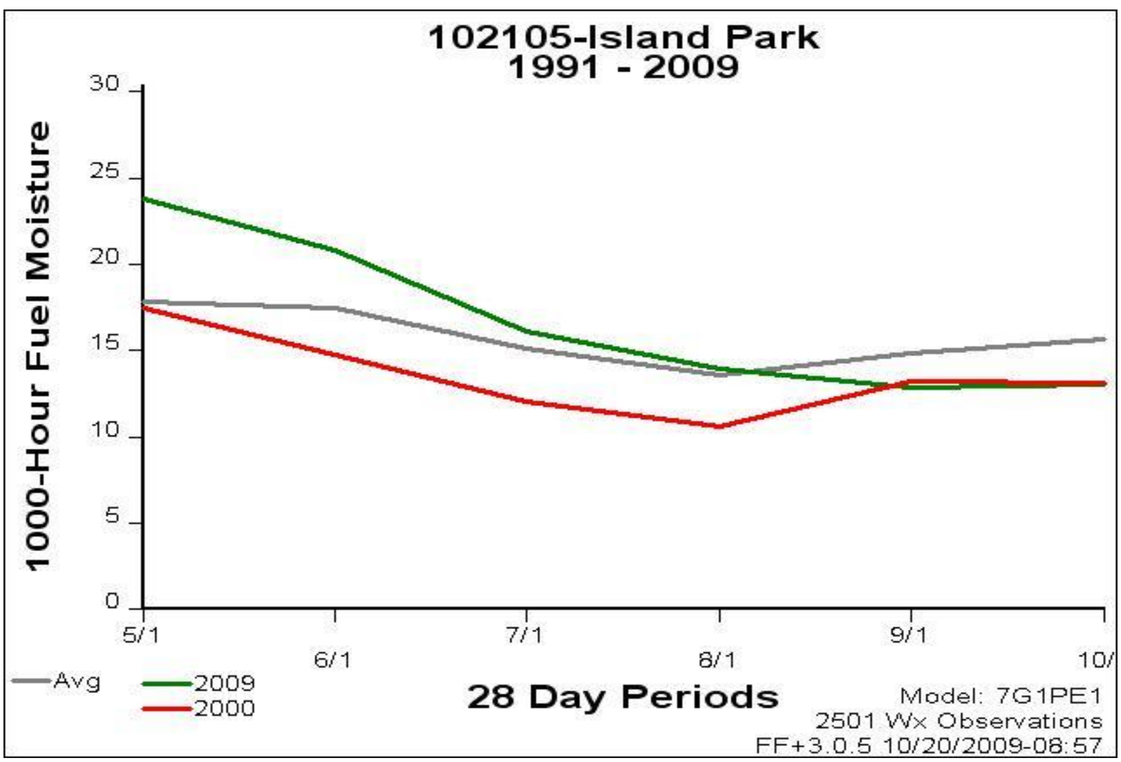

Figure 4.2(f) Observed and average 1000 Hour Fuel Moisture at Island Park RAWS site, Fire Weather Zone 411.

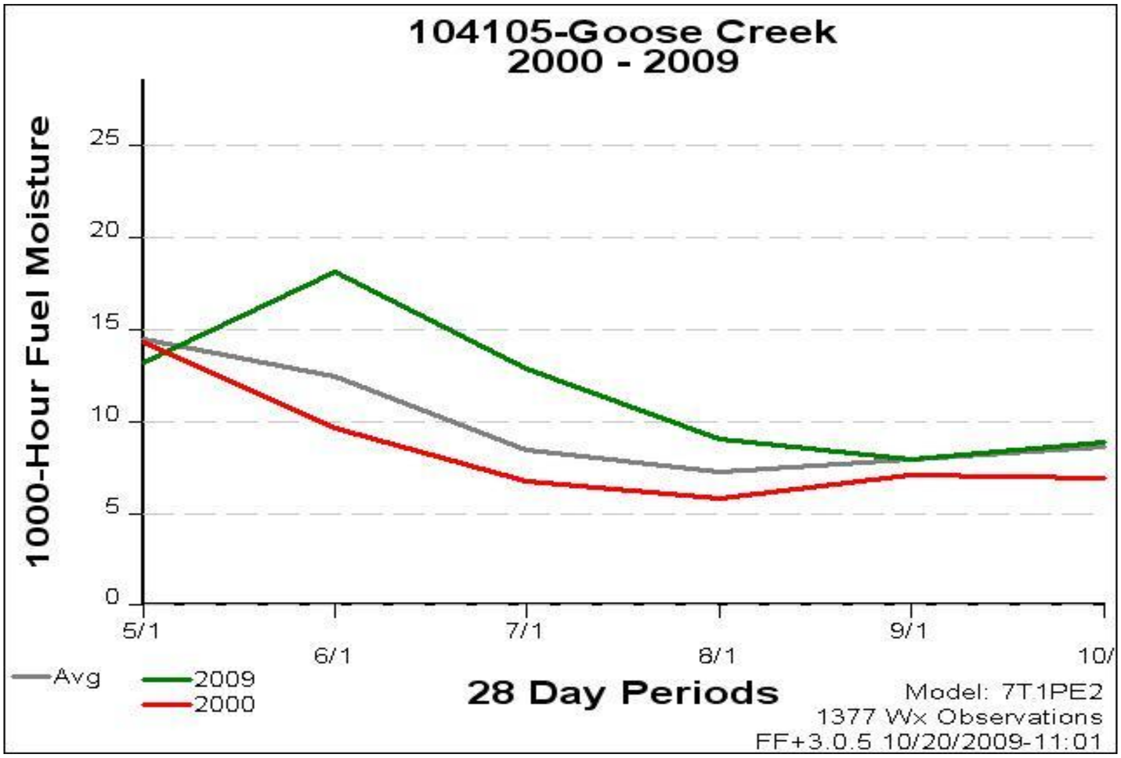

Figure 4.2(g) Observed and average 1000 Hour Fuel Moisture at Goose Creek RAWS site, Fire Weather Zone 412.

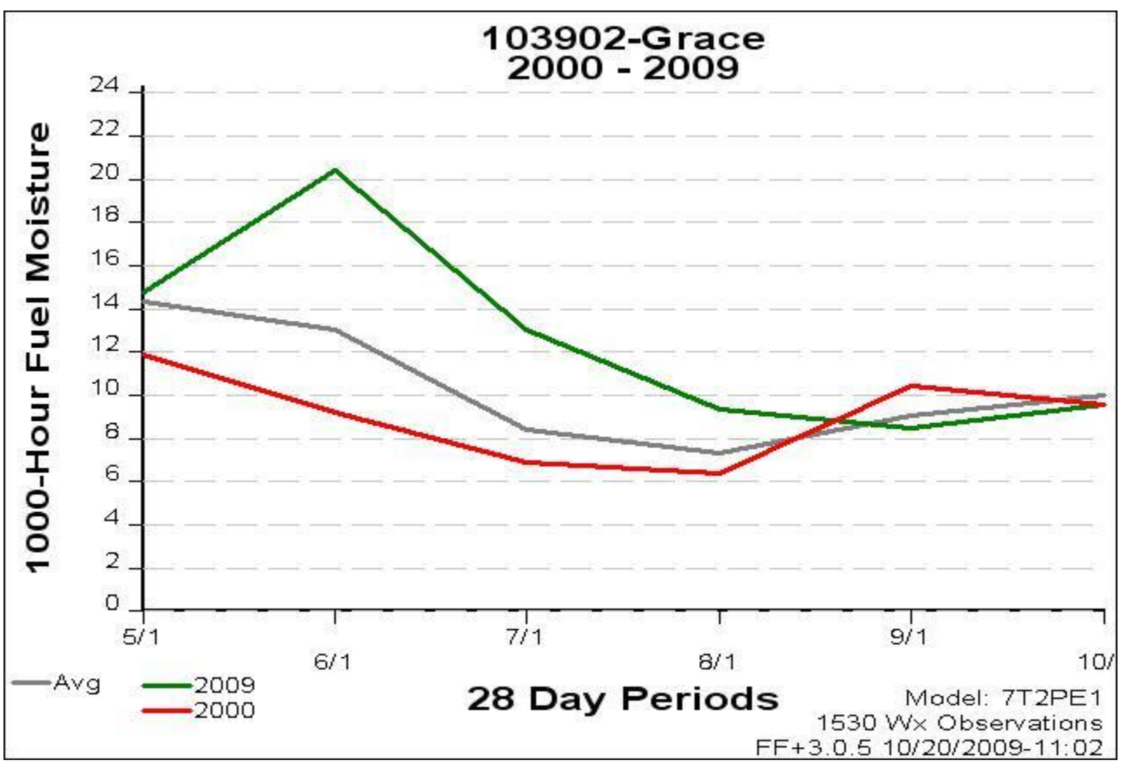

Figure 4.2(h) Observed and average 1000 Hour Fuel Moisture at Grace RAWS site, Fire Weather Zone 413.

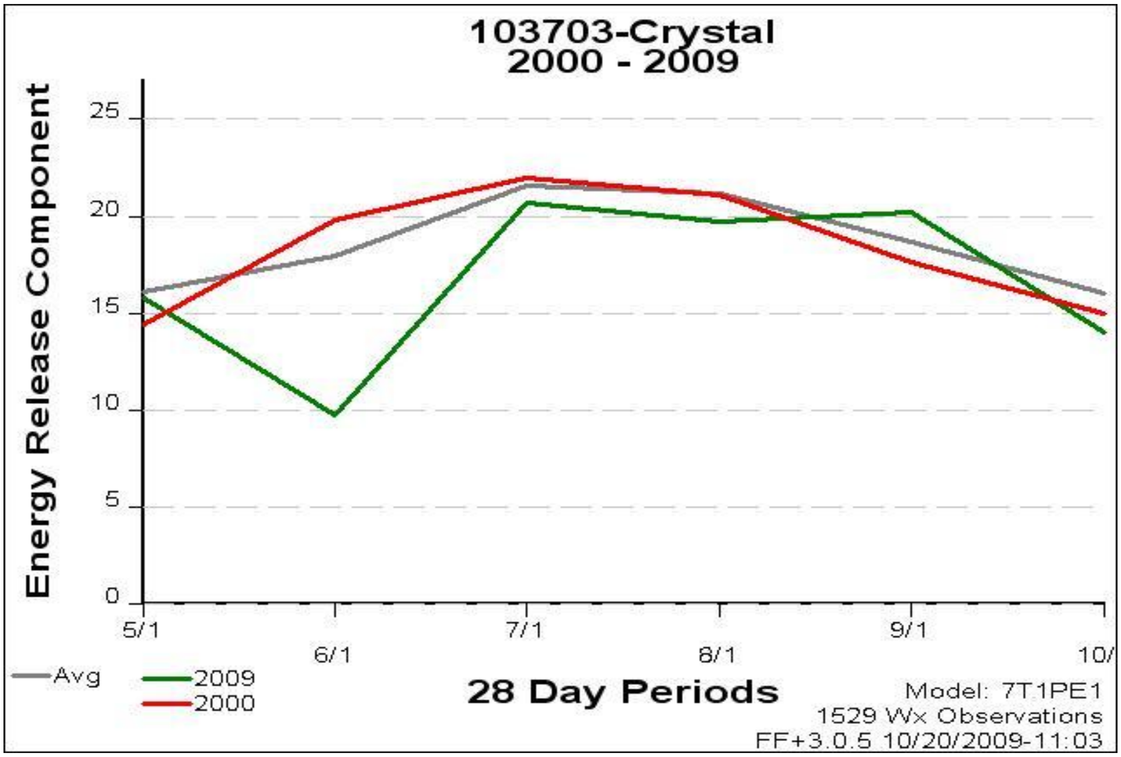

Figure 4.3 Calculated Energy Release Component at Crystal RAWS site, Fire Weather Zone 410.

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5. Office Operations:

5.1 Red Flag Verification

1. Formal verification of Red Flag Warnings in Southeast Idaho began with the 2000 fire season and is now a permanent part of the fire weather program. Verification is based on current Red Flag Warning and Fire Weather Watch criteria that has been coordinated with local land management agencies and published in the Great Basin Annual Operating Plan for Fire Weather and Predictive Services. Current criteria for the Pocatello Fire Weather District are shown in paragraph 5.1.2 below.

Events considered "short fused" or having time lengths typically less than six hours (Dry Lightning) were split out from other events occurring over a longer time period, reference tables 5.1 (a-d) below.

2. Conditions that indicate a Red Flag Event:

Fire Weather Watches and Red Flag Warnings, are issued for conditions of <u>very high or extreme fire danger</u> (as determined by land management agencies) and <u>dry fuels</u>, in combination with one of the following:

a. Widely scattered or greater ($\geq$ 15% of aerial coverage) thunderstorm activity.

b. Winds gusts for any three or more hours $\geq$ 25 mph for Southeast Idaho Mountains, $\geq$ 30 mph for the Snake River Plain and relative humidity is $\leq$ 15 percent.

c. In the judgment of the forecaster, weather conditions will create a critical fire control situation. These conditions may include strong microburst winds, passage of a cold front or a strong wind shift.

Red Flag criteria are developed from a local knowledge of fuel types, terrain, weather conditions common or unusual to the area, historical fire behavior, and judgment of the local land management agencies. Because the criteria for issuing Red Flag products can vary from one district to another, these verification results are not necessarily comparable with other forecast offices.

3. Methodology:

Verification of Red Flag Warnings was conducted on a zone by zone basis. Example: If a warning for strong wind was issued for fire weather zones 409 and 410, but strong winds were observed only in zone 410, then this counts as two warnings, one that verified and one false alarm. Also, if strong winds were observed in zone 412, but no warning was issued, then this would be counted as one missed event.

Sources of verification included Remote Automated Weather Stations (RAWS), Meteorological Reporting Stations (METAR), lightning data, WSR-88D Doppler Weather Radar estimated precipitation, volunteer weather spotter information such as heavy rain events, and reports of observed fire behavior from personnel in the field.

Local MESONET reporting networks maintained by Idaho Department of Transportation and the Idaho National Laboratory were not used as a source of verification for wind events since there are differences in observing standards at these sites.

Statistical parameters were calculated as follows:

Probability of Detection	POD = a/(a+c)
Critical Success Index	CSI = a/(a+b+c)
False Alarm Rate	FAR = 1-[a/(a+b)]

where

a = the number of correct warnings (verified)
b = the number of incorrect warnings (not verified)
c = the number of events not warned

4. Sources of error:

Red Flag criteria for wind events in the Great Basin were modified based on interagency agreement set forth in the Great Basin Fire Weather Operating Plan for 2005 and continue without change for the 2006 and 2007 fire seasons. Beginning with the 2008 fire season, the distinction between wet and dry thunderstorms was eliminated from the Red Flag criteria owing to concerns of lightning strikes and fire ignition occurring outside the main thunderstorm rain shaft. A thunderstorm was previously considered “dry” if it produced little or no precipitation (< 0.10 inch). The mid-point of a forecast range serves as the break point for watch/warning issuance. This effectively adds an element of representativeness to the verification process. Therefore, any inference of trends from verification results must consider changes made to the established criteria for a Red Flag Event and verification procedures in past years. The Red Flag Event criteria and verification procedures also changed in 2002 and 2004. Please reference past issues of this Fire Weather Annual Report.

Forecaster skill level and confidence may be lower for peak wind gusts over sustained wind speed. Downward transport of momentum in the atmosphere, complex terrain, inversions of temperature lapse rate, variations in surface insolation owing to vegetative ground cover, reflectivity, absorption and transmissivity of the atmosphere, and the energy phase change of water in the atmosphere all impact the observed peak surface wind gust. Not all of these processes are sufficiently represented by available computer modeling and operational forecaster techniques.

Personal judgment was required to determine when lightning was more than an isolated event and significant in areal coverage.

Field observations of fire behavior may serve as an important indicator of Red Flag conditions. On rare occasion this may affect the best judgment of the forecaster and land management personnel. On days or in locations where there were no on-going fires this information was not available.

In paragraph 2c above, judgment of the forecaster and land management personnel is permitted to override the strict criteria of relative humidity and wind gusts. The general consensus is there is enough uncertainty in the fire environment (fuel, weather and topography) and this should remain a necessary and important element of the Red Flag criteria. This also requires a certain amount of judgment in the verification process.

Both RAWS and METAR stations report instantaneous wind gusts, but the observing standards for height of the wind sensor can vary.

On rare occasion the fuels were defined as critical at an elevation below that of existing RAWS and METAR stations.

Skill and lead-time vary with the type of event.

5. Decision Criteria

Wind – The number of available RAWS and METAR sites varied both with the area warned and location where fuels were defined as critical. Every attempt was made to judge the representativeness of wind conditions.

Lightning – Archived lightning data was used to determine verification. A good deal of judgment was needed to determine if the observed lightning was more than an isolated event.

Wet versus dry thunderstorms – this element was removed from the Red Flag Criteria beginning with the 2008 fire season. The number of reported fire starts is not a reliable indicator since lightning strikes can occur outside the thunderstorm precipitation shield striking drier fuels and a single thunderstorm can be long lived producing numerous strikes over some distance.

Other – Reports of observed fire behavior from personnel in the field continue to be useful when dealing with long-term drought conditions and days of reported low relative humidity. If sustained fire runs are observed but available observations do not necessarily support warning criteria, the judgment would likely fall on the side of safety of life and property.

6. Results:

Red Flag Warning criteria were met on a total of 6 different days during this fire season in the Pocatello Fire Weather District. One of these days was the result of low relative humidity and gusty winds. There were no days when Red Flag Warning criteria were met somewhere in the Pocatello Fire Weather District without a warning in effect.

	May	June	July	August	September	October	Total
Total # watches	0	0	0	2	2	0	4
Total # of warnings	0	0	0	4	8	0	12
Number warnings that were preceded by a watch	0	0	0	2	2	0	4
Warnings verified (a)	0	0	0	2	6	0	8
Warnings not verified (b)	0	0	0	2	2	0	4
Events not warned (c)	0	0	0	0	1	0	1

Table 5.1(a). Combined synoptic (long term) and short fused Red Flag event products issued in the WFO Pocatello Fire Weather District during the 2009 season.

	May	June	July	August	September	October	Total
Total # watches	0	0	0	0	0	0	0
Total # of warnings	0	0	0	0	3	0	3
Number warnings preceded by a watch	0	0	0	0	0	0	0
Warnings verified (a)	0	0	0	0	3	0	3
Warnings not verified (b)	0	0	0	0	0	0	0
Events not warned (c)	0	0	0	0	0	0	0

Table 5.1(b). Synoptic scale Red Flag event products issued in the WFO Pocatello Fire Weather District during the 2009 season. Example cold fronts, low relative humidity, strong pressure gradient related winds.

	May	June	July	August	September	October	Total
Total # of watches	-	0	0	2	2	0	4
Total # of warnings	-	0	0	4	5	0	9
Number warnings preceded by a watch	-	0	0	2	2	0	4
Warnings verified (a)	-	0	0	2	3	0	5
Warnings not verified (b)	-	0	0	2	2	0	4
Events not warned (c)	-	0	0	0	1	0	1

Table 5.1(c). Short fused Red Flag event products issued in the WFO Pocatello Fire Weather District during the 2009 season. Example: lightning events and strong micro burst winds.

Red Flag verification resulted in the following:

	Synoptic Events	Short Fused Events (Lightning)	All Events
Probability of detection POD =	1.00	0.83	0.89
Critical success index CSI =	1.00	0.50	0.62
False alarm rate FAR =	0.00	0.44	0.33
Average lead time for Warnings =	11 hrs. 48 min.	8 hrs. 15 min.	9 hrs. 26 min.

Table 5.1(d). Combined synoptic (long term) and short fused Red Flag event products issued in the WFO Pocatello Fire Weather District during the 2009 season.

7. Implications:

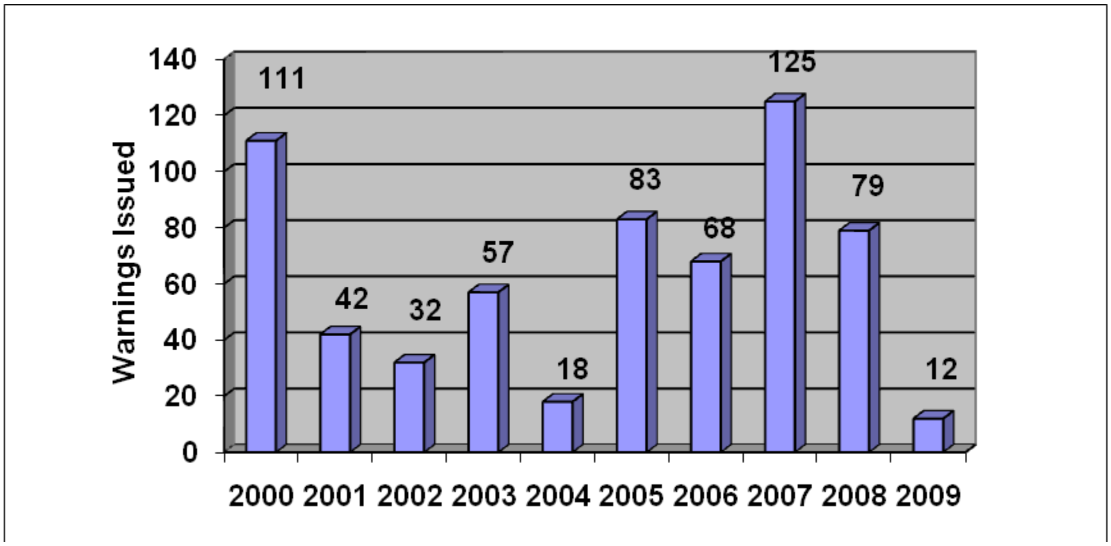

Figure 5.2 Historical Red Flag Warnings in Southeast Idaho.

The 2009 fire season in Southeast Idaho was remarkably short lived owing to cooler than normal spring temperatures, mountain snow pack that persisted well into the summer months, and spring precipitation well above normal. Local vegetation entered the "green-up" period much later than normal followed by later than normal curing of local fuels. Lightning activity was judged to be significant on 5 days this season, compared to the typical seasonal average of 4 days (Figure 2.9) and accounted for 6 of the 9 observed events. The Weather Forecast Office in Pocatello achieved a probability of detection of 0.89 but this was off set by a false alarm rate of 0.33 this year, down from .35 in 2008.

The wet versus dry thunderstorm distinction was eliminated from the Red Flag criteria beginning with the 2008 fire season. This historically has been a controversial subject since the observed rainfall varies from one thunderstorm to the next on any given event day and lighting strikes occurring outside the main rain shaft can and often do result in ignition of fuels. The new Red Flag criteria resulted in an apparent conflict of ideas on August 8, 2008 when a Flash Flood Watch was simultaneously in effect with a Red Flag Warning near Ketchum, Idaho. The Flash Flood Watch highlighted the potential for rapid runoff and debris flows on the burn scar left by the Castle Rock Wild Fire of 2007. Hydrophobic soils combined with steep terrain lacking vegetative cover greatly increase the threat of flash flooding with minimal rain fall for years following a wild fire event.

5.2 Spot Forecasts prepared by WFO Pocatello:

Wildfires	43
Prescribed Fires	118
HAZMAT	0
Backup	2
Exercise	1
Search & Rescue	4
Total	168

Verbal Phone Briefings	
for fire support	84
search & rescue	3
exercise	1
Total	88

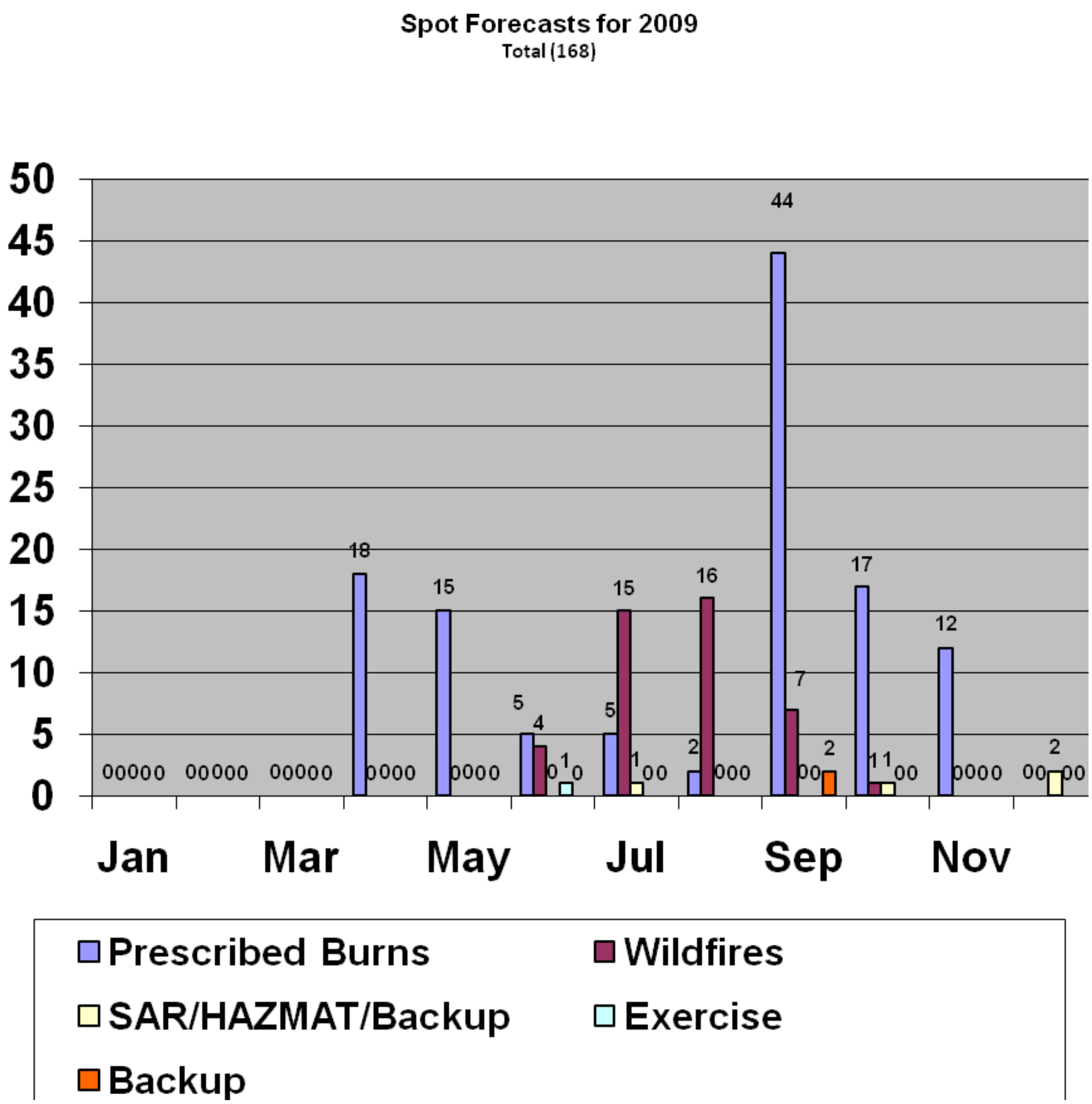

Figure 5.3(a) Spot Forecasts prepared by the Pocatello Fire Weather District during the 2009 fire season.

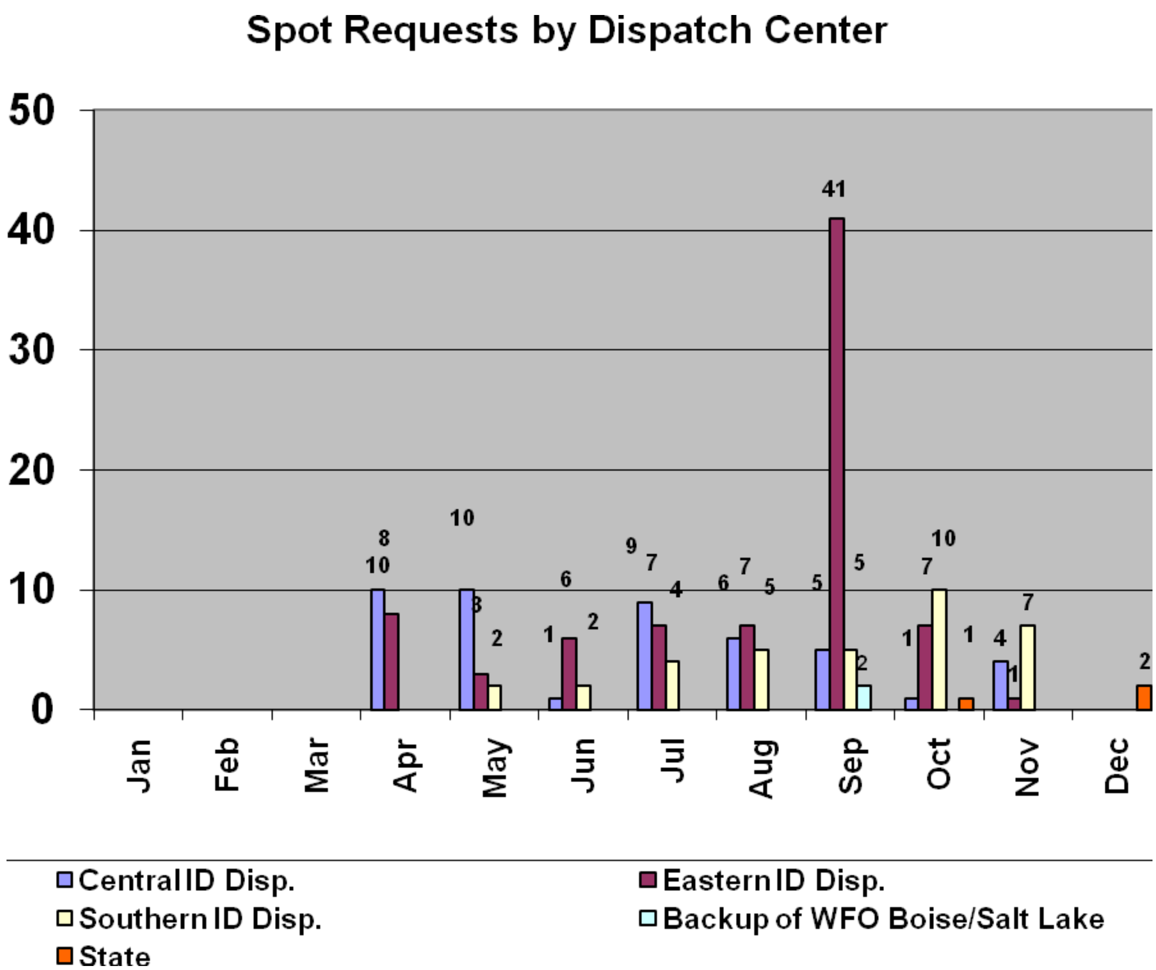

Figure 5.3(b) Spot Forecasts requested by dispatch area during the 2009 fire season in Southeast Idaho.

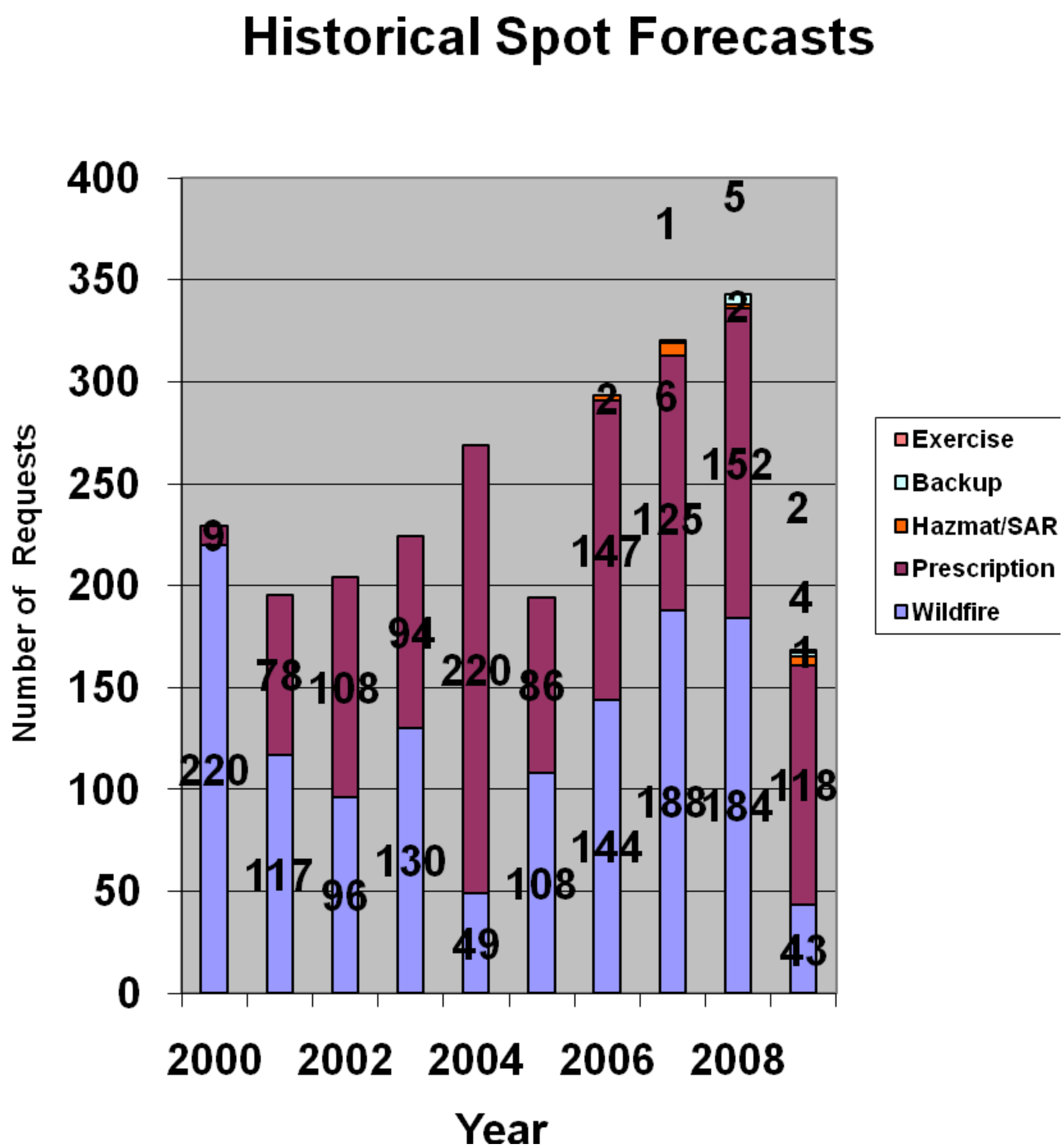

Figure 5.4 Historical trends in Spot Forecast requests for the Pocatello Fire Weather District.

5.3 Fire Dispatches Supported by WFO Pocatello: There were no IMET dispatches this fire season.

Date	*Dispatch Location*	*Incident Meteorologist*
None		

Table 5.3 Incident Meteorologist Dispatches by WFO Pocatello

5.4 Training: WFO Pocatello staff participated in the following training courses during the 2007 season.

<u>Forecaster</u>	<u>Training situation</u>
Bob Survick and Jack Messick	National Incident Meteorologist Workshop held March 16 through 20, 2009 in Boise, Idaho.
Rick Dittmann	Instructor S-290 Intermediate Wildland Fire Behavior, May 18-19, 2009 hosted by the Salmon-Challis National Forest Fire Academy, Salmon, Idaho.
Bob Survick	Instructor S-290 Intermediate Wildland Fire Behavior, June 1-2, 2009 Eastern Idaho Technical College, Idaho Falls, Idaho.

5.5 Field Visits: The staff at WFO Pocatello participated in seven interagency meetings this year.

<u>Location</u>	<u>Dates</u>
Fire Weather Post Season Meeting WFO Pocatello, Idaho	January 31, 2008
Ground Hog Day Chili Cook-off National Weather Service Office including EIIFC Pocatello, Idaho	February 2, 2009
Montana/Idaho Air Shed Meeting Pocatello BLM Field Office Pocatello, Idaho	February 18 and 19, 2009
WFO Boise and WFO Pocatello Fire Weather Backup Operations	February 18, 2009

Meeting Pocatello, Idaho	
South Central Idaho Interagency Coop/FMO Meeting South Idaho Interagency Fire Center Shoshone, Idaho	March 11, 2009
Spring Operations Meeting Eastern Idaho Interagency Fire Center Idaho Falls, Idaho	May 5, 2009

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